
EXHIBIT A
CONTINUED

U.S. Patent No. 6,324,150**Exhibit A4**

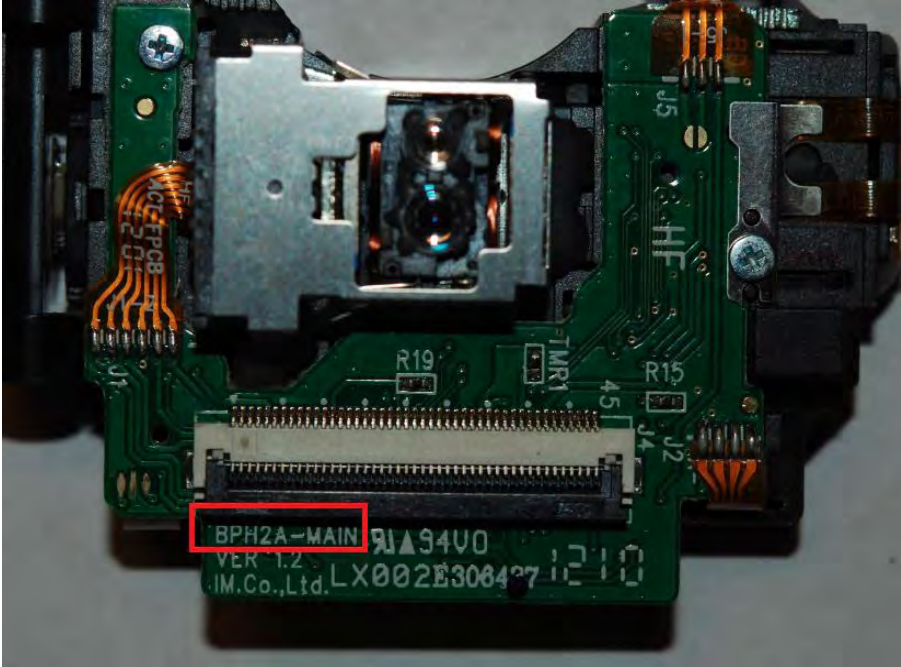
CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
9. An optical pickup head ¹	<p>Each element of this claim, except where noted otherwise, and each element of the asserted claims dependent thereon, is present literally and/or under the doctrine of equivalents in the accused LG Products.²</p> <p>ITRI provides these infringement contentions before obtaining complete discovery and disclosures from LG. Specifically, LG has not produced documentation sufficient to demonstrate how each and every optical pickup head operates, and has not produced documentation sufficient to demonstrate that it has identified every LG document corresponding to accused optical pickup heads. Further, LG has “confirmed” that particular LG products utilize certain optical pickup heads that are not borne out by physical inspection. ITRI expects that LG will produce information to fully meet its discovery obligations regarding LG’s instrumentalities beyond that which is publically available. Accordingly, ITRI reserves the right to modify these infringement contentions based upon LG’s document production and required disclosures.</p>

¹ ITRI contends that the preamble to this claim is not limiting in any manner. ITRI’s references to the accused product regarding the preamble are for illustration only and do not constitute an admission that the preamble is limiting.

² The LG Products often practice the claim elements in numerous alternative ways in accordance with the present chart. The LG Products should be assumed to act alone or in combination as referenced herein and interpreted in the singular or plural accordingly. LG further provides the LG Products as well as the instructions to customers/users causing them to use the accused products in an infringing manner, including, without limitation, in their default and expected uses.

To the extent each element of this claim, and the asserted claims dependent thereon are not present literally in the accused LG Products, each element is present under the doctrine of equivalents because there is no substantial difference between the elements of the asserted claims and the corresponding functionality in the accused instrumentality, *i.e.*, the corresponding functionality in the accused product performs substantially the same function, in substantially the same way to achieve substantially the same results as the claimed elements.

U.S. Patent No. 6,324,150**Exhibit A4**

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p>ITRI contends that, upon physical inspection, the following products use optical pickup units (“OPUs”) that are identical for purposes of infringement analysis: LP220, BP320, BP520, and BP620. Moreover, physical inspection of the BP520 and BP620 shows that these units use the OPU BPH2A.</p> <p><i>Photograph of OPU from BP620</i></p> 

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Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<div data-bbox="533 380 1848 412">REDACTED</div> <div data-bbox="533 436 1312 469"></div> <div data-bbox="552 498 1631 1182">REDACTED</div> <div data-bbox="533 1214 1052 1247"></div>


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Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p>Thus, ITRI contends that all additional products that use the BPT-421 (model BPT-421A) or the BPH2A OPU infringe in a similar manner to the products physically inspected for this chart.</p> <p><i>Photograph of LG BP620 Wi-Fi Blu-ray Player</i></p>  A photograph of a black LG BP620 Wi-Fi Blu-ray Player. The device is rectangular and sleek, resting on a wooden surface. A silver cable is plugged into the top. In the bottom right corner, there is a small white sticker with the text "1-800-243-0000" and "US Customer Support".


U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p data-bbox="533 376 1146 409"><i>Photograph of LG BP320 Wi-Fi Blu-ray Player</i></p>  A photograph of a black LG BP320 Wi-Fi Blu-ray Player. The device is a slim, rectangular unit with a matte black finish. It is positioned on a wooden surface. On the left side of the front panel, there is a small yellow and black sticker with the text "1-800-243-0000" and "24 HOURS". The LG logo is visible on the left side of the front panel. On the right side, there are several ports and buttons, including a Blu-ray Disc logo. A power cord is visible behind the device.


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Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p data-bbox="533 376 1146 412"><i>Photograph of LG BP520 Wi-Fi Blu-ray Player</i></p>  A photograph of a black LG BP520 Wi-Fi Blu-ray Player. The player is a slim, rectangular device with a silver front panel. A red and white promotional sticker is placed on top of the player. The sticker features the LG logo, the text 'CONTENT', '3D Capable', 'Full HD 1080p Picture Performance', 'New Standard 1080p in Main HD', and 'LG.COM'. The player is resting on a wooden surface.


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Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p data-bbox="533 376 1146 409"><i>Photograph of LG BP220 Wi-Fi Blu-ray Player</i></p>  A photograph of a black LG BP220 Wi-Fi Blu-ray Player. The device is a slim, rectangular unit with a matte black finish. It is positioned on a wooden surface. On the front panel, there is a disc tray on the left, the LG logo, a Blu-ray Disc logo, and a row of control buttons on the right. A small white sticker with the text "1-800-243-0000" and "us.lgservice.com" is affixed to the bottom right corner of the front panel. A power cord and other cables are visible behind the device.

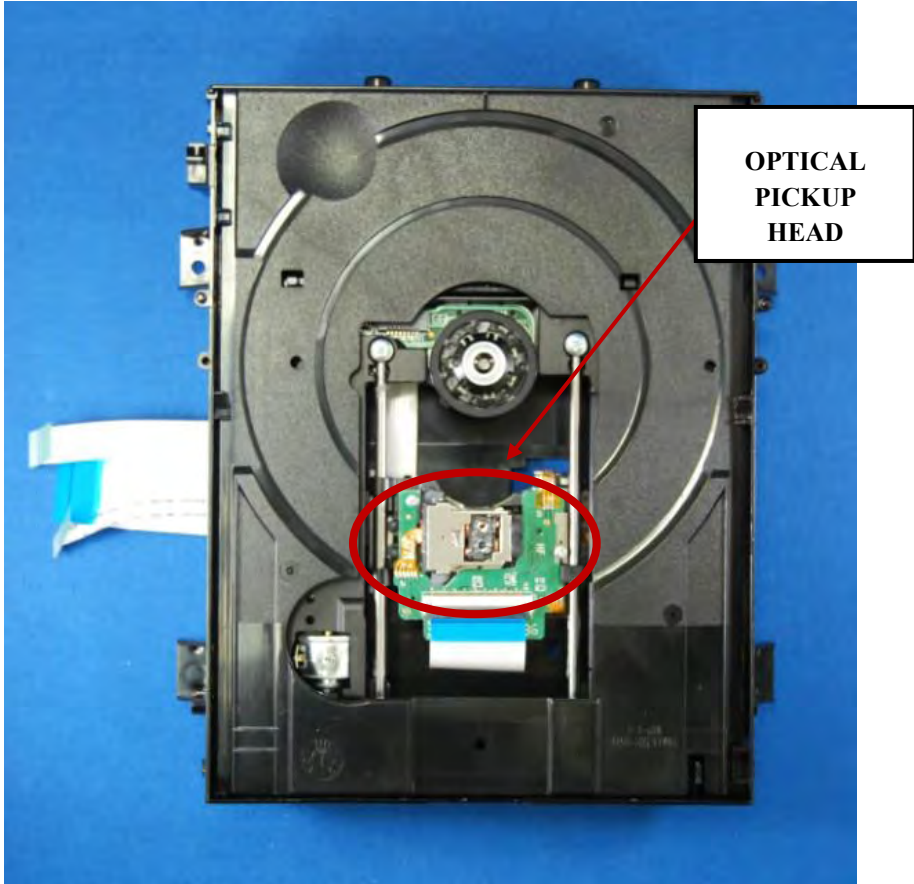
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p data-bbox="533 375 1213 410"><i>Photograph of optical disk drive module from BP220</i></p> 

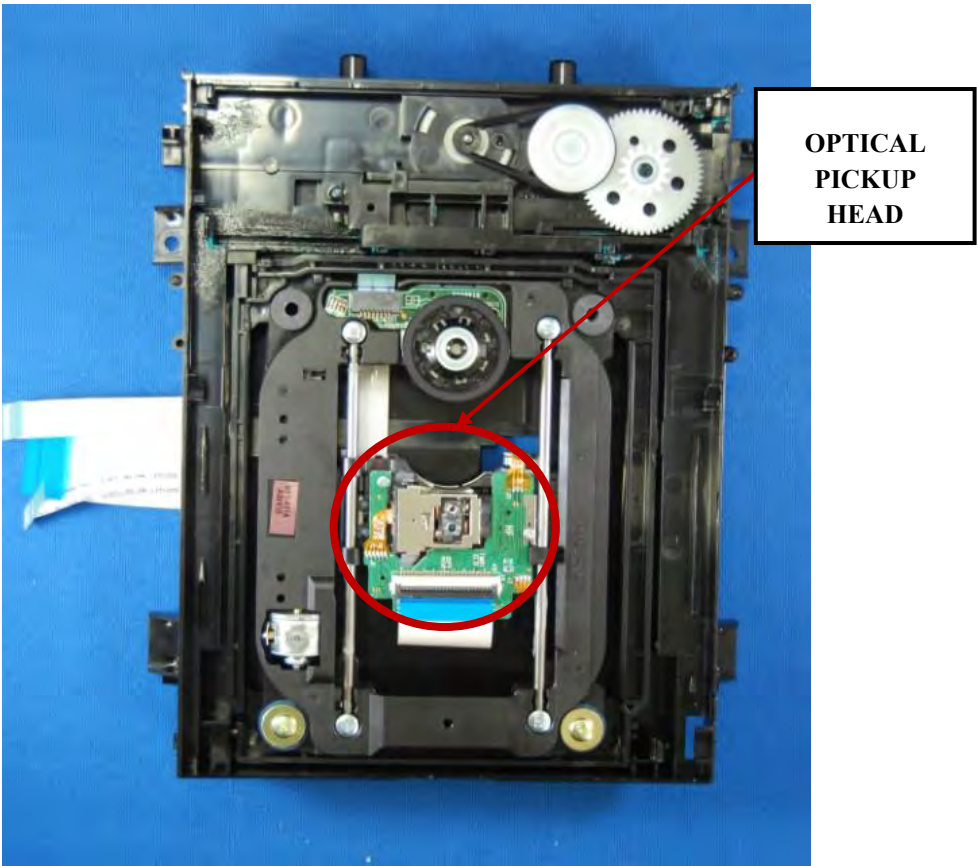
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p data-bbox="533 375 1780 410"><i>Photograph showing the optical disk drive mechanism with the panel cover removed from BP220</i></p>  <p data-bbox="1528 597 1659 698">OPTICAL PICKUP HEAD</p>

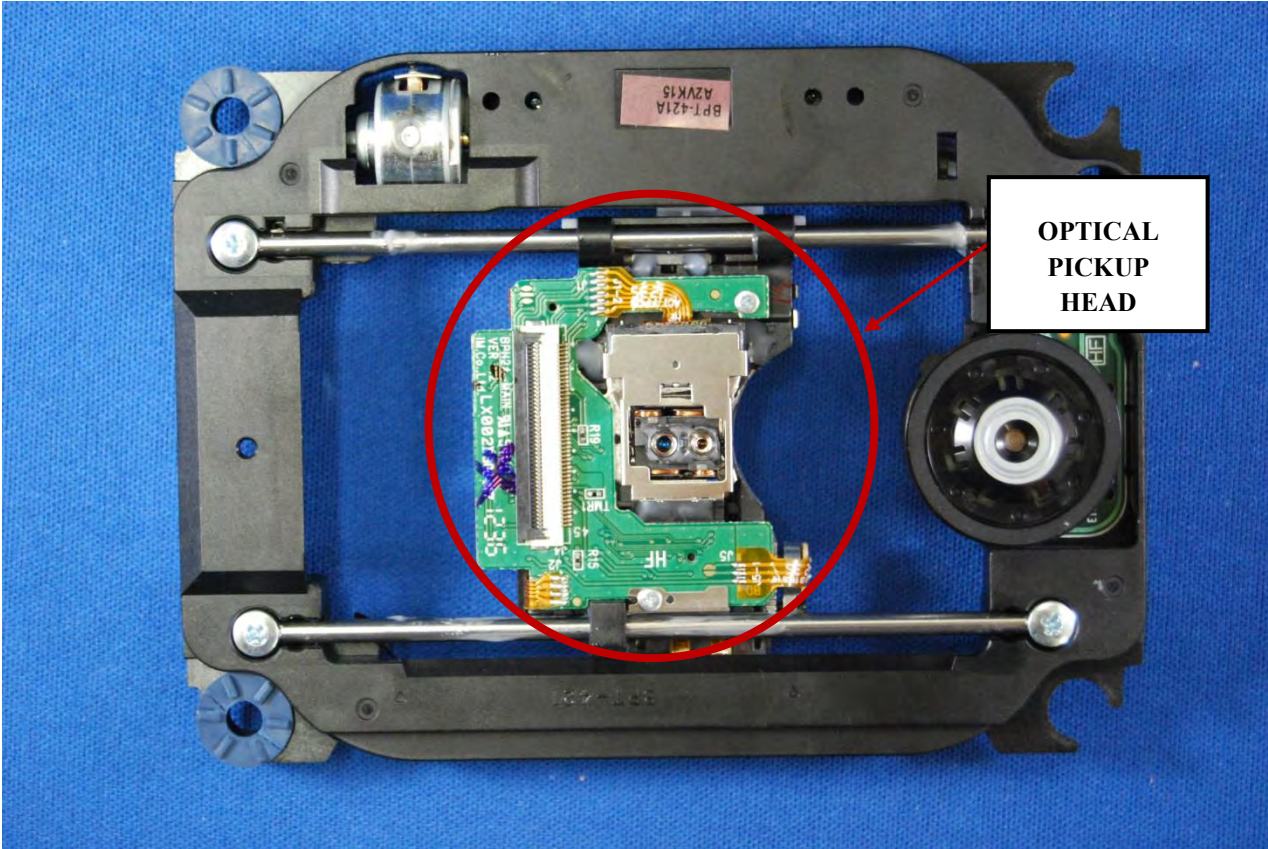
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p><i>Photograph showing the optical disk drive mechanism without the top panel cover from BP220</i></p>  <p>The photograph shows the internal components of an optical disk drive. A red circle highlights the optical pickup head assembly, which is a green printed circuit board (PCB) with various electronic components. A red arrow points from a label 'OPTICAL PICKUP HEAD' to this assembly. The drive mechanism is housed in a black metal frame, and a white ribbon cable is visible on the left side.</p>

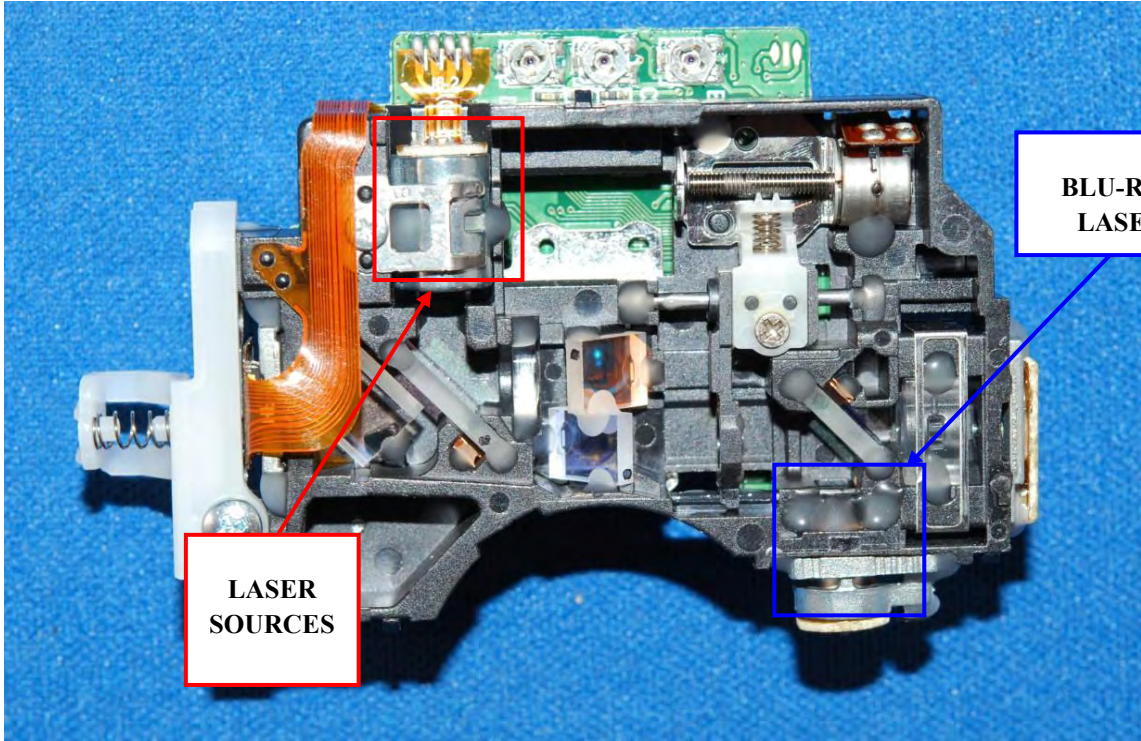
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p data-bbox="535 375 1835 410"><i>Photograph of the optical disk drive mechanism without the top and bottom panel covers from BP220</i></p> 

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Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
<p>9a. using multiple laser sources of different wavelengths for reading/writing data on optical recording media of varying densities, comprising:</p>	<p><i>Photograph of the optical pick up head from BP220</i></p>  <p>The photograph shows a complex mechanical assembly of an optical pick-up head. A red box labeled 'LASER SOURCES' points to a component on the left side of the assembly. A blue box labeled 'BLU-RAY LASER' points to a component on the right side of the assembly. The assembly includes various mechanical parts, a green circuit board at the top, and a white plastic housing on the left.</p>

U.S. Patent No. 6,324,150**Exhibit A4**





CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)																								
	<p>Home > Blu-ray Players > LG BP220</p> <p>FEATURES TECHNICAL SPECIFICATIONS REVIEWS ASK & ANSWER PRODUCT SUPPORT</p> <p>BLU-RAY DISC™ PLAYER WITH SMARTTV</p> <p>BP220 COLLAPSE ALL SPECS</p> <div> <p>DISC PLAYBACK CAPABILITY</p> <table> <tr><td>BD-Rom</td><td>Yes</td></tr> <tr><td>BD-R</td><td>Yes</td></tr> <tr><td>BD-RE</td><td>Yes</td></tr> <tr><td>DVD (NTSC)</td><td>Yes</td></tr> <tr><td>DVD (PAL)</td><td>Yes</td></tr> <tr><td>DVD-R</td><td>Yes</td></tr> <tr><td>DVD-RW</td><td>Yes</td></tr> <tr><td>DVD+R</td><td>Yes</td></tr> <tr><td>DVD+RW</td><td>Yes</td></tr> <tr><td>Audio CD</td><td>Yes</td></tr> <tr><td>DTS-CD</td><td>Yes</td></tr> <tr><td>CD-R/CD-RW</td><td>Yes</td></tr> </table> </div> <p>VIDEO FORMAT</p> <p>VIDEO FEATURES</p> <p>AUDIO FORMAT</p> <p>AUDIO FEATURES</p> <p>SMART TV FEATURES</p> <p>CONNECTIVITY</p> <p>APPLICATION</p> <p>AV INPUTS/OUTPUTS</p> <p>SUPPLIED ACCESSORIES</p> <p>POWER</p> <p>Source: http://www.lg.com/us/blu-ray-players/lg-BP220-blu-ray-dvd-player</p>	BD-Rom	Yes	BD-R	Yes	BD-RE	Yes	DVD (NTSC)	Yes	DVD (PAL)	Yes	DVD-R	Yes	DVD-RW	Yes	DVD+R	Yes	DVD+RW	Yes	Audio CD	Yes	DTS-CD	Yes	CD-R/CD-RW	Yes
BD-Rom	Yes																								
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BD-RE	Yes																								
DVD (NTSC)	Yes																								
DVD (PAL)	Yes																								
DVD-R	Yes																								
DVD-RW	Yes																								
DVD+R	Yes																								
DVD+RW	Yes																								
Audio CD	Yes																								
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CD-R/CD-RW	Yes																								

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CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)																																												
	<p data-bbox="575 396 1121 423">BLU-RAY DISC™ PLAYER WITH SMARTTV</p> <p data-bbox="575 440 646 467">BP320</p> <p data-bbox="1486 444 1703 467"> COLLAPSE ALL SPECS</p> <div data-bbox="575 500 1377 927"> <p data-bbox="575 508 842 529"> DISC PLAYBACK CAPABILITY</p> <table data-bbox="575 548 1717 922"> <tr><td>BD-Rom</td><td>Yes</td></tr> <tr><td>BD-R</td><td>Yes</td></tr> <tr><td>BD-RE</td><td>Yes</td></tr> <tr><td>DVD (NTSC)</td><td>Yes</td></tr> <tr><td>DVD (PAL)</td><td>Yes</td></tr> <tr><td>DVD-R</td><td>Yes</td></tr> <tr><td>DVD-RW</td><td>Yes</td></tr> <tr><td>DVD+R</td><td>Yes</td></tr> <tr><td>DVD+RW</td><td>Yes</td></tr> <tr><td>Audio CD</td><td>Yes</td></tr> <tr><td>DTS-CD</td><td>Yes</td></tr> <tr><td>CD-R/CD-RW</td><td>Yes</td></tr> </table> </div> <div data-bbox="575 938 1717 1284"> <p data-bbox="575 946 737 967"> VIDEO FORMAT</p> <table data-bbox="575 987 1717 1279"> <tr><td>MPEG2</td><td>Yes</td></tr> <tr><td>MPEG4 AVC (H.264)</td><td>Yes</td></tr> <tr><td>MKV</td><td>Yes</td></tr> <tr><td>AVC Rec</td><td>Yes</td></tr> <tr><td>AVCHD</td><td>Yes</td></tr> <tr><td>M4V</td><td>Yes</td></tr> <tr><td>WMV</td><td>Yes</td></tr> <tr><td>3GP</td><td>Yes</td></tr> <tr><td>FLV</td><td>Yes</td></tr> <tr><td>VOB</td><td>Yes</td></tr> </table> </div> <p data-bbox="537 1304 1356 1331">Source: http://www.lg.com/us/blu-ray-players/lg-BP320-blu-ray-dvd-player</p>	BD-Rom	Yes	BD-R	Yes	BD-RE	Yes	DVD (NTSC)	Yes	DVD (PAL)	Yes	DVD-R	Yes	DVD-RW	Yes	DVD+R	Yes	DVD+RW	Yes	Audio CD	Yes	DTS-CD	Yes	CD-R/CD-RW	Yes	MPEG2	Yes	MPEG4 AVC (H.264)	Yes	MKV	Yes	AVC Rec	Yes	AVCHD	Yes	M4V	Yes	WMV	Yes	3GP	Yes	FLV	Yes	VOB	Yes
BD-Rom	Yes																																												
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DVD (NTSC)	Yes																																												
DVD (PAL)	Yes																																												
DVD-R	Yes																																												
DVD-RW	Yes																																												
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DVD+RW	Yes																																												
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DTS-CD	Yes																																												
CD-R/CD-RW	Yes																																												
MPEG2	Yes																																												
MPEG4 AVC (H.264)	Yes																																												
MKV	Yes																																												
AVC Rec	Yes																																												
AVCHD	Yes																																												
M4V	Yes																																												
WMV	Yes																																												
3GP	Yes																																												
FLV	Yes																																												
VOB	Yes																																												

U.S. Patent No. 6,324,150

Exhibit A4


CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)																								
	<p data-bbox="577 391 1535 451">3D-CAPABLE BLU-RAY DISC™ PLAYER WITH SMARTTV AND WIRELESS CONNECTIVITY</p> <p data-bbox="577 472 646 496">BP520</p> <p data-bbox="1241 475 1409 496">  DOWNLOAD PDF </p> <p data-bbox="1499 475 1717 496">  COLLAPSE ALL SPECS </p> <div data-bbox="577 526 1341 971" style="border: 2px solid red; padding: 5px;"> <p data-bbox="577 537 846 558"> DISC PLAYBACK CAPABILITY</p> <table data-bbox="646 581 1255 943"> <tbody> <tr><td>BD-Rom</td><td>Yes</td></tr> <tr><td>BD-R</td><td>Yes</td></tr> <tr><td>BD-RE</td><td>Yes</td></tr> <tr><td>DVD (NTSC)</td><td>Yes</td></tr> <tr><td>DVD (PAL)</td><td>Yes</td></tr> <tr><td>DVD-R</td><td>Yes</td></tr> <tr><td>DVD-RW</td><td>Yes</td></tr> <tr><td>DVD+R</td><td>Yes</td></tr> <tr><td>DVD+RW</td><td>Yes</td></tr> <tr><td>Audio CD</td><td>Yes</td></tr> <tr><td>DTS-CD</td><td>Yes</td></tr> <tr><td>CD-R/CD-RW</td><td>Yes</td></tr> </tbody> </table> </div> <p data-bbox="577 976 741 997"> VIDEO FORMAT</p> <p data-bbox="535 1040 1344 1070">Source: http://www.lg.com/us/blu-ray-players/lg-BP520-blu-ray-dvd-player</p>	BD-Rom	Yes	BD-R	Yes	BD-RE	Yes	DVD (NTSC)	Yes	DVD (PAL)	Yes	DVD-R	Yes	DVD-RW	Yes	DVD+R	Yes	DVD+RW	Yes	Audio CD	Yes	DTS-CD	Yes	CD-R/CD-RW	Yes
BD-Rom	Yes																								
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U.S. Patent No. 6,324,150**Exhibit A4**

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)																								
	<p data-bbox="569 386 1556 451">3D-CAPABLE BLU-RAY DISC™ PLAYER WITH SMARTTV AND WIRELESS CONNECTIVITY</p> <p data-bbox="569 467 646 500">BP620</p> <p data-bbox="1255 472 1423 496">  DOWNLOAD PDF </p> <p data-bbox="1520 472 1745 496">  COLLAPSE ALL SPECS </p> <div data-bbox="562 524 1329 976"> <p data-bbox="569 537 846 561">- DISC PLAYBACK CAPABILITY</p> <table data-bbox="569 581 1329 959"> <tbody> <tr><td>BD-Rom</td><td>Yes</td></tr> <tr><td>BD-R</td><td>Yes</td></tr> <tr><td>BD-RE</td><td>Yes</td></tr> <tr><td>DVD (NTSC)</td><td>Yes</td></tr> <tr><td>DVD (PAL)</td><td>Yes</td></tr> <tr><td>DVD-R</td><td>Yes</td></tr> <tr><td>DVD-RW</td><td>Yes</td></tr> <tr><td>DVD+R</td><td>Yes</td></tr> <tr><td>DVD+RW</td><td>Yes</td></tr> <tr><td>Audio CD</td><td>Yes</td></tr> <tr><td>DTS-CD</td><td>Yes</td></tr> <tr><td>CD-R/CD-RW</td><td>Yes</td></tr> </tbody> </table> </div> <p data-bbox="569 992 737 1016">+ VIDEO FORMAT</p> <p data-bbox="569 1049 751 1073">+ VIDEO FEATURES</p> <p data-bbox="537 1114 1346 1138">Source: http://www.lg.com/us/blu-ray-players/lg-BP620-blu-ray-dvd-player</p>	BD-Rom	Yes	BD-R	Yes	BD-RE	Yes	DVD (NTSC)	Yes	DVD (PAL)	Yes	DVD-R	Yes	DVD-RW	Yes	DVD+R	Yes	DVD+RW	Yes	Audio CD	Yes	DTS-CD	Yes	CD-R/CD-RW	Yes
BD-Rom	Yes																								
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DVD+RW	Yes																								
Audio CD	Yes																								
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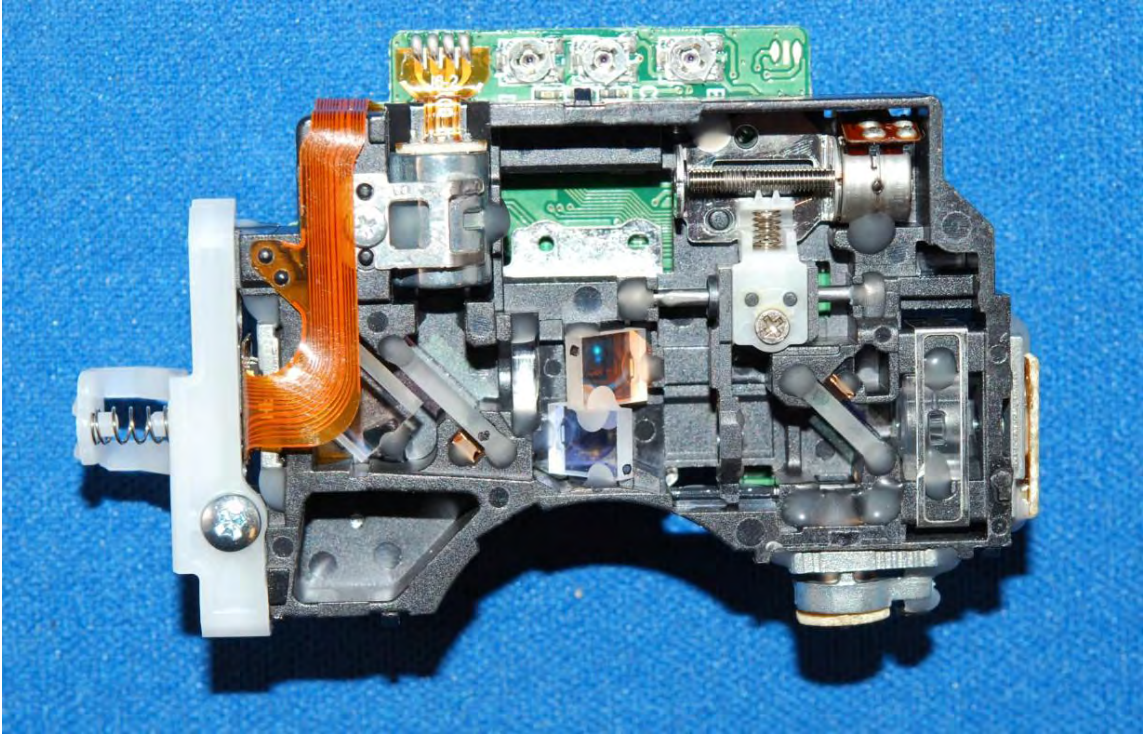
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p data-bbox="533 375 1365 410"><i>Photograph of the optical pick up head from bottom from BP220</i></p>  A photograph of an optical pickup head assembly, likely from an LG BP220 drive. The assembly is shown from a bottom perspective, revealing a dark, textured metal base. Two white labels are affixed to the base: one on the left with the text 'BPH2A 12K15 0215 28' and a QR code, and one on the right with the text 'BPH2A 12K15 0207 45 67' and a QR code. The assembly includes various components such as a white plastic housing on the right, orange flexible circuitry, and a green printed circuit board at the bottom with several gold-plated pins. The entire unit is set against a blue background.

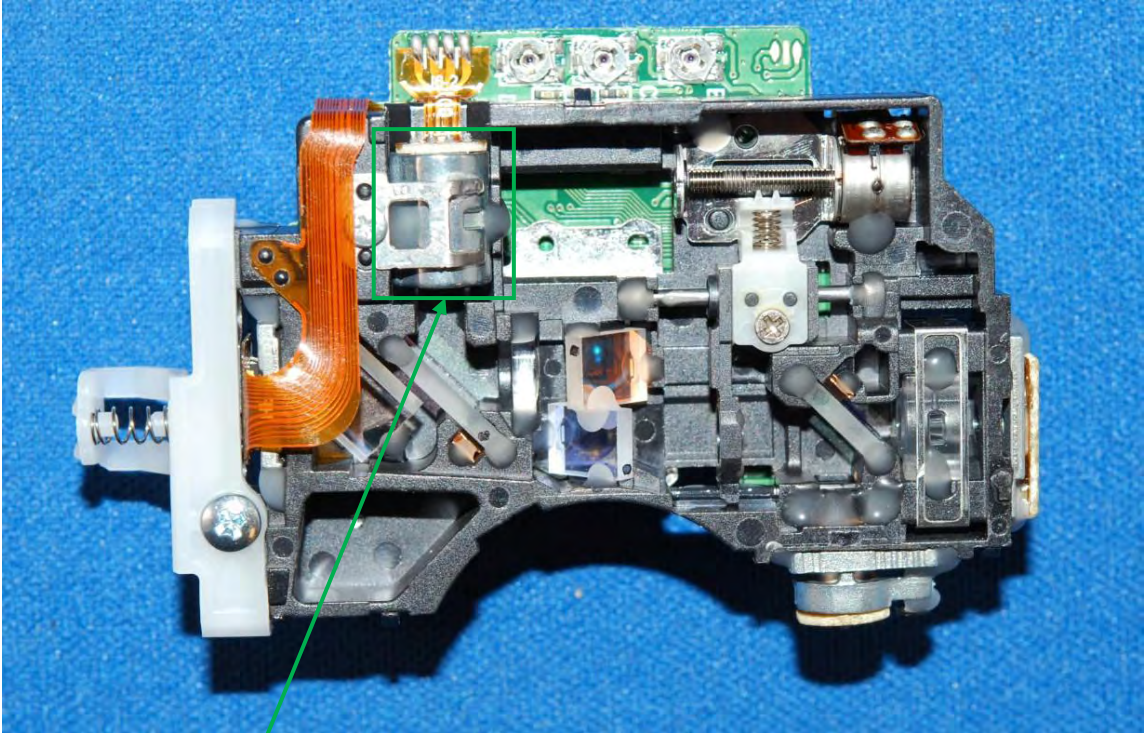
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p data-bbox="535 378 1199 410"><i>Photograph of the optical pick up head from BP220</i></p> 

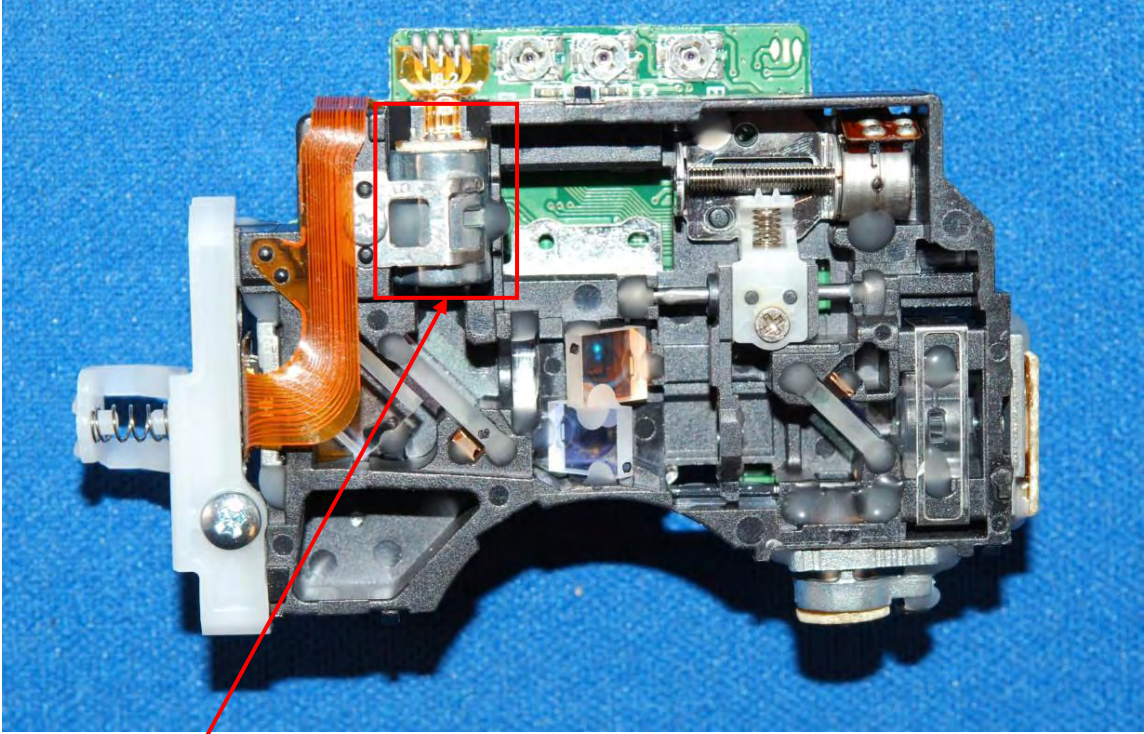
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
9b. a first laser beam generator and	 <p data-bbox="690 1182 1058 1338">FIRST AND SECOND LASER BEAM GENERATORS</p>

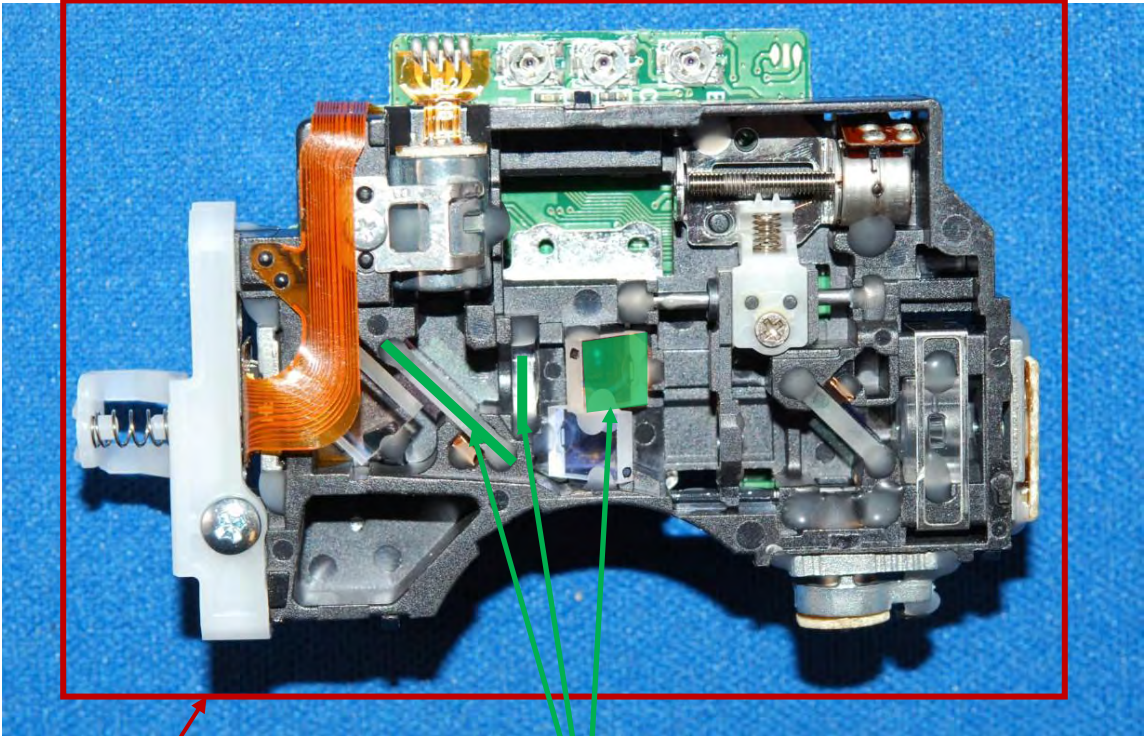
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Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
9c. a second laser beam generator, for generating a first laser beam and a second laser beam of different wavelengths,	 <p data-bbox="657 1122 1024 1279">FIRST AND SECOND LASER BEAM GENERATORS</p> <p data-bbox="535 1344 1751 1377">CD and DVD use 780 nm and 650nm red lasers, respectively, Blu-ray uses a 405 nm blue laser</p>

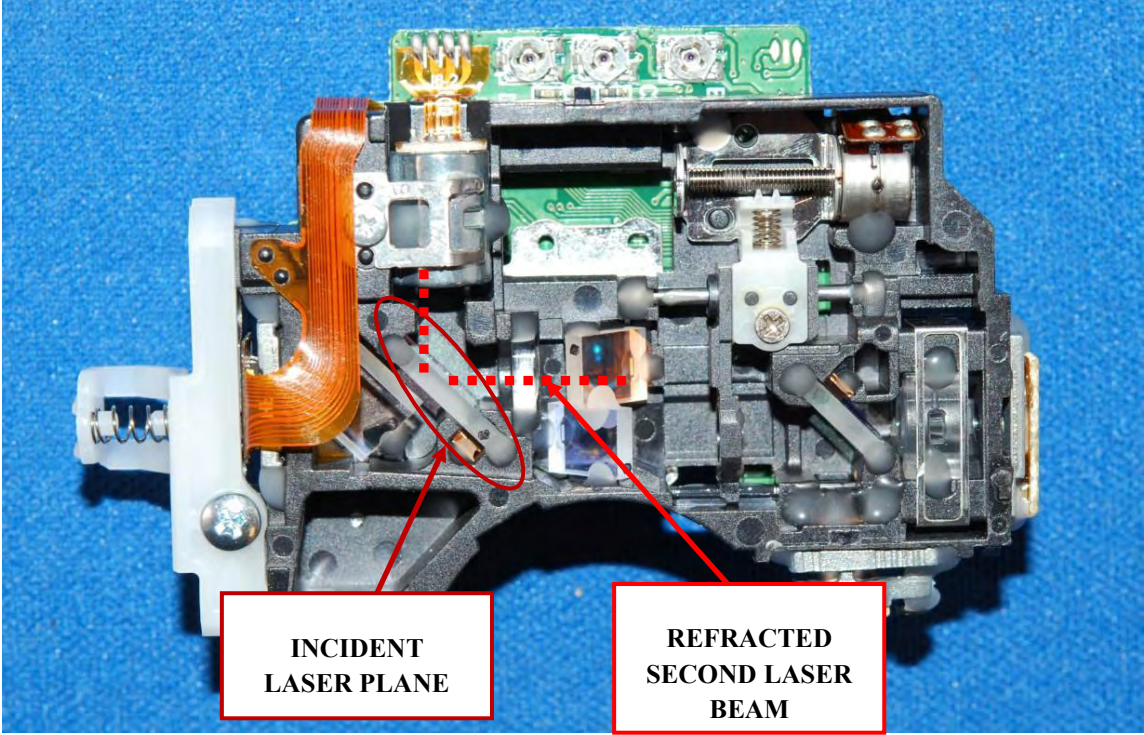
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Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
9d. a beam shaper, allocated in optical paths of said first and second laser beams, and formed with a plurality of planes locating in different angles, comprising:	 <p data-bbox="602 1208 894 1300">BEAM SHAPER</p> <p data-bbox="1047 1196 1369 1328">PLURALITY OF PLANES</p>

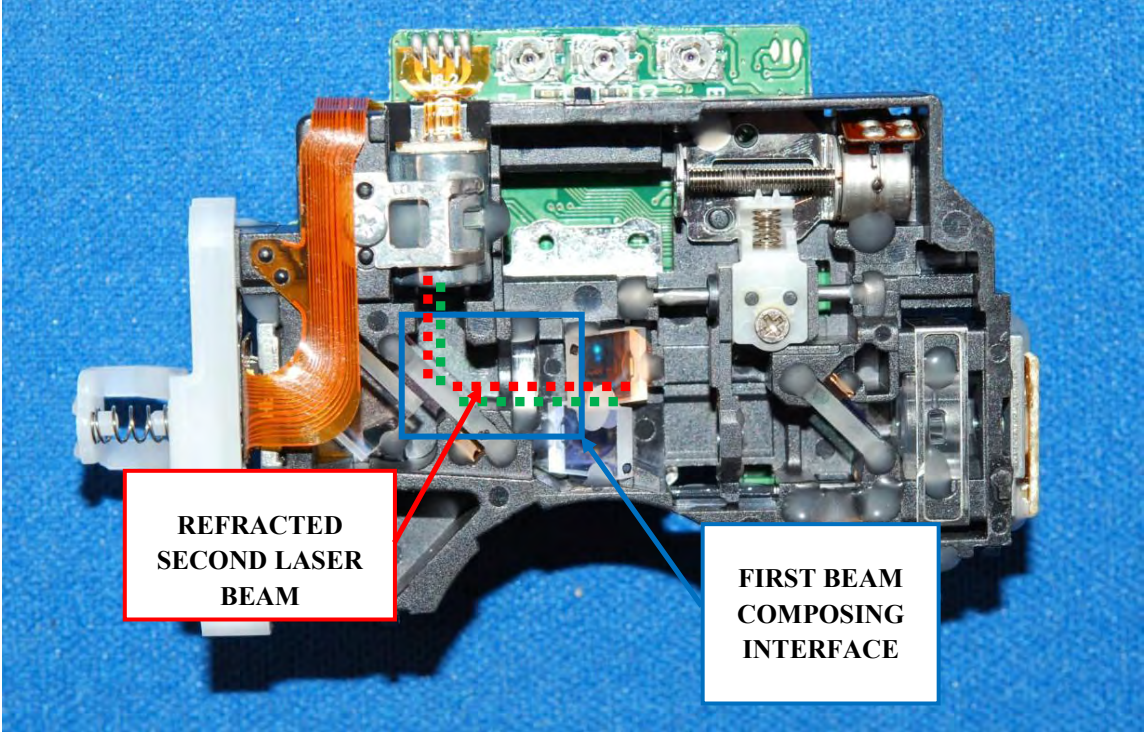
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
9e. an incident laser plane for refracting said second laser beam, to generate a refracted second laser beam;	 <p data-bbox="842 963 1115 1089">INCIDENT LASER PLANE</p> <p data-bbox="1234 954 1507 1101">REFRACTED SECOND LASER BEAM</p> <p data-bbox="632 1144 1381 1271">Legend: SECOND LASER BEAM ■■■■■■■■</p>

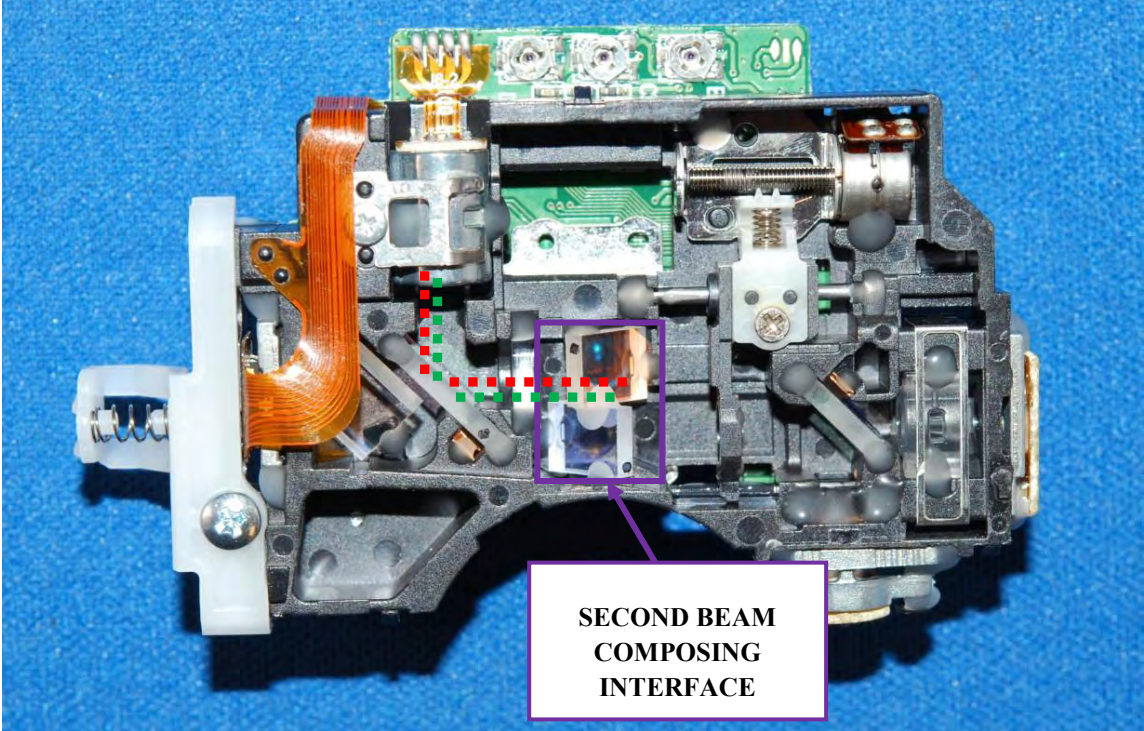
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Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
9f. a first beam-composing interface for composing said refracted second laser beam with said first laser beam into an optical output path;	 <p data-bbox="747 841 1016 992">REFRACTED SECOND LASER BEAM</p> <p data-bbox="1325 894 1556 1070">FIRST BEAM COMPOSING INTERFACE</p> <div data-bbox="625 1125 1377 1252"> <p>Legend:</p> <p>SECOND LASER BEAM ■■■■■■</p> <p>FIRST LASER BEAM ■■■■■■</p> </div>

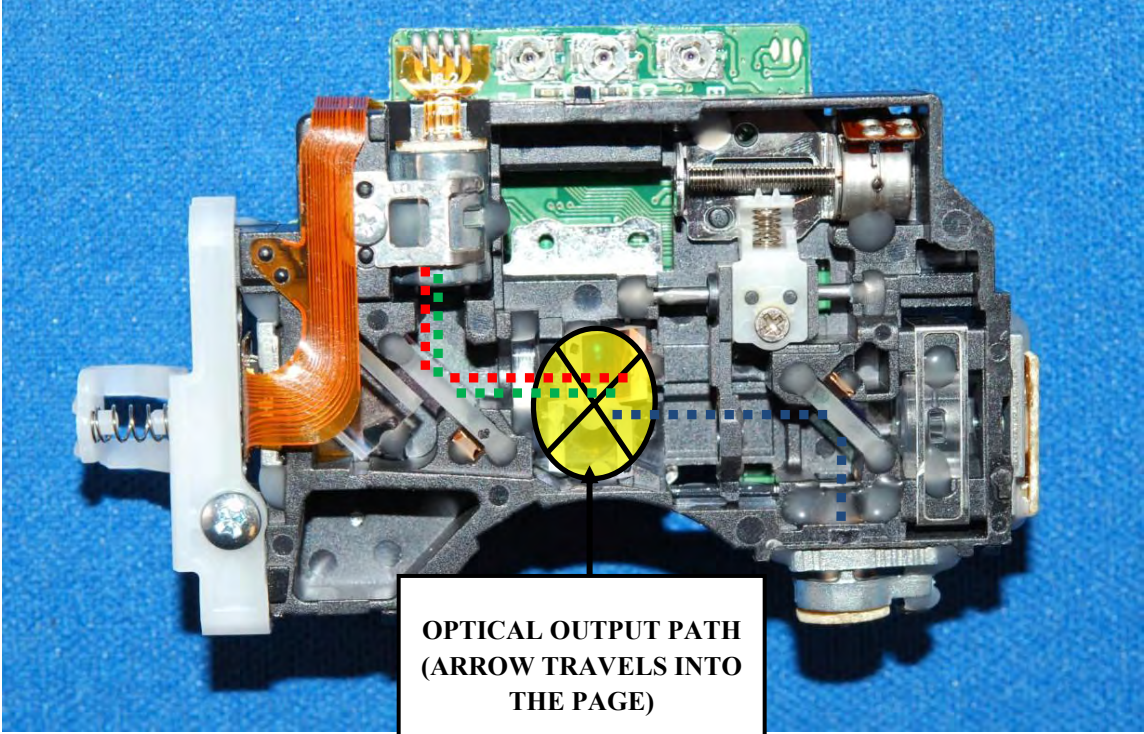
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Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
9g. a second beam-composing interface for composing said first and second laser beams,	 <p data-bbox="1150 933 1444 1089">SECOND BEAM COMPOSING INTERFACE</p> <p data-bbox="630 1122 1379 1252">Legend: SECOND LASER BEAM FIRST LASER BEAM</p>

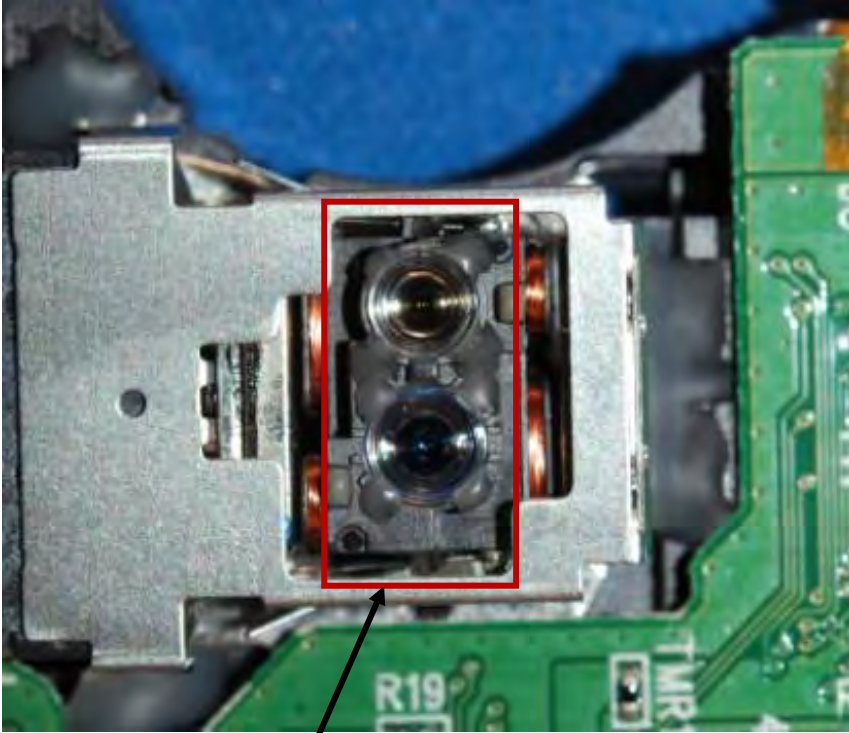
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
<p>9h. after they are being composed by said first beam-composing interface, with a third laser beam into said optical output path;</p>	 <p data-bbox="1020 951 1383 1114">OPTICAL OUTPUT PATH (ARROW TRAVELS INTO THE PAGE)</p> <div data-bbox="625 1146 1446 1312"> <p>Legend:</p> <p>SECOND LASER BEAM ■■■■■■■■</p> <p>FIRST LASER BEAM ■■■■■■■■</p> <p>THIRD LASER BEAM (BLU-RAY) ■■■■■■■■</p> </div>

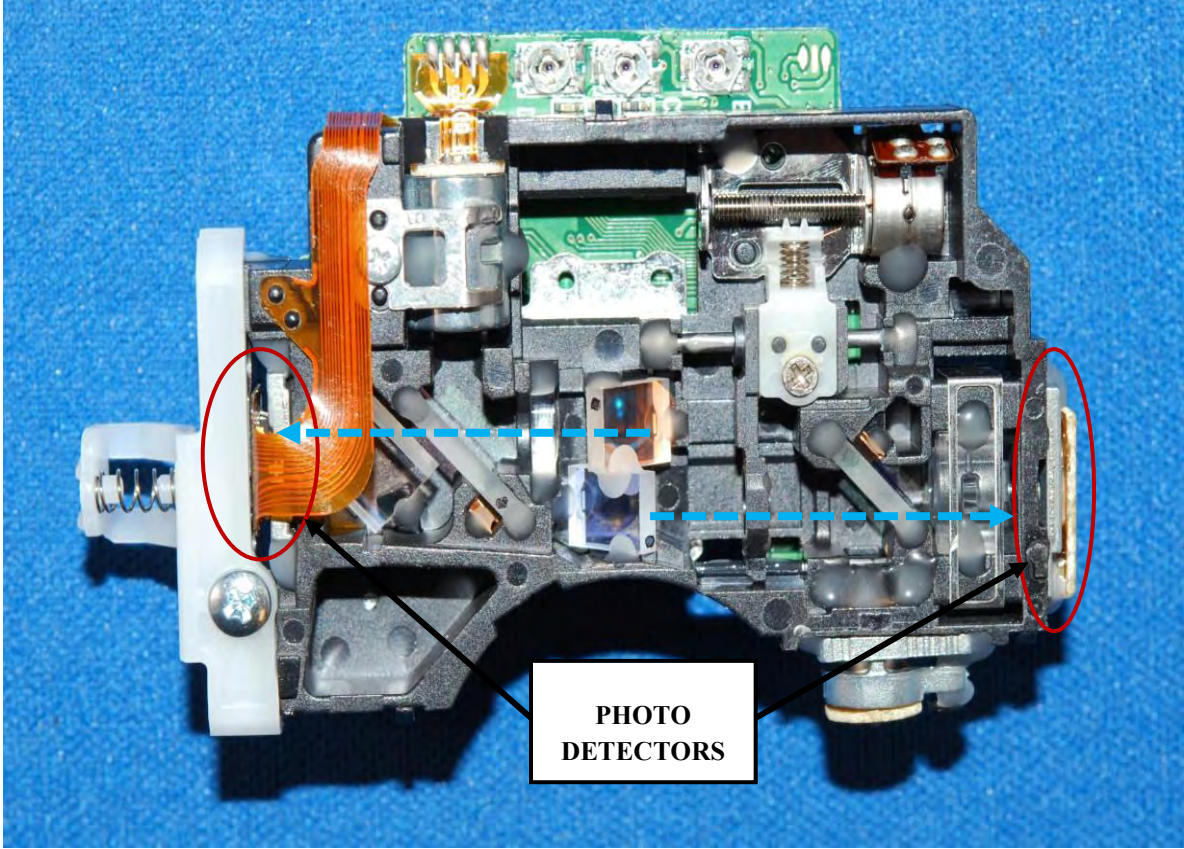
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
9i. an objective lens for focusing laser beams in said optical output path onto said optical recording media as an reading/writing spot; and	<p data-bbox="535 378 1199 410"><i>Photograph of the optical pick up head from BP220</i></p>  <p data-bbox="732 1230 932 1325">AT LEAST ONE OBJECTIVE LENS</p>

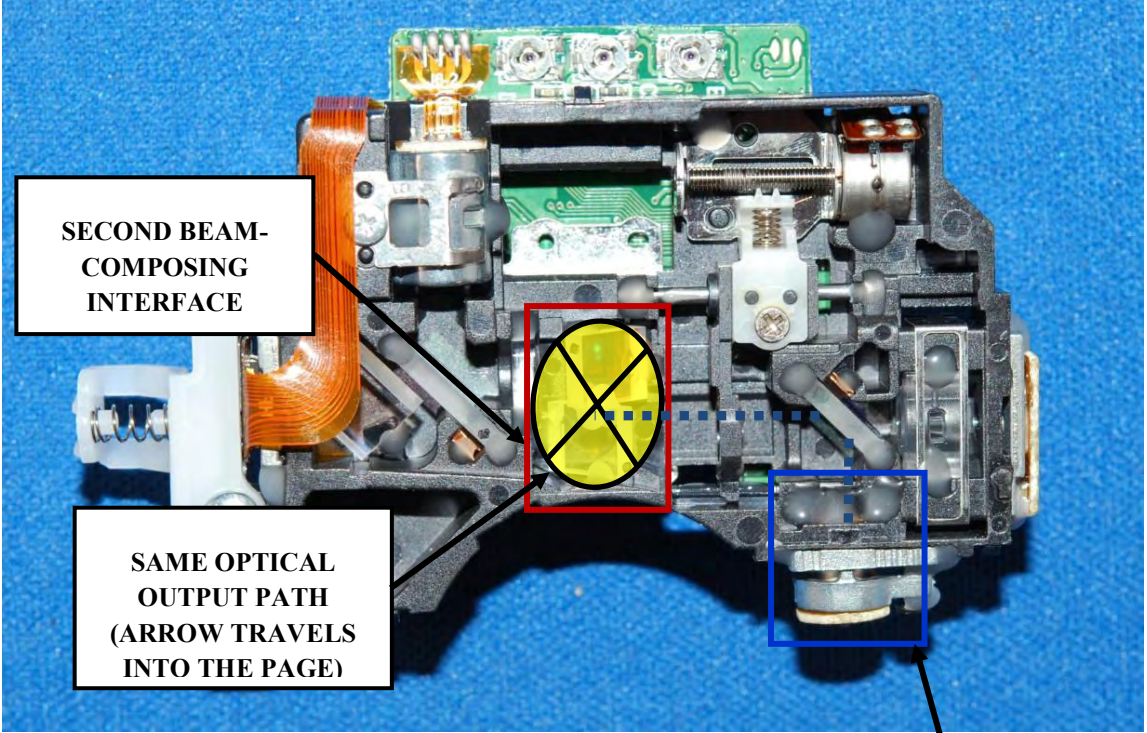
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
<p>9j. a photo detector for transforming a reflective laser beam returning from said optical recording media into corresponding signals and accomplishing data retrieval;</p>	 <p data-bbox="1129 1036 1354 1154">PHOTO DETECTORS</p> <div data-bbox="632 1235 1383 1365"> <p>Legend: REFLECTIVE LASER BEAM</p> </div>

U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
<p>9k. wherein said third laser beam is an incident laser beam generated by a third laser beam generator, refracted to said second beam-composing interface and composed into same optical output path.</p>	 <p>SECOND BEAM-COMPOSING INTERFACE</p> <p>SAME OPTICAL OUTPUT PATH (ARROW TRAVELS INTO THE PAGE)</p> <p>Legend: THIRD LASER BEAM </p> <p>THIRD LASER BEAM GENERATOR (BLU-RAY)</p>

U.S. Patent No. 6,324,150**Exhibit A5**

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
9. An optical pickup head ¹	<p>Each element of this claim, except where noted otherwise, and each element of the asserted claims dependent thereon, is present literally and/or under the doctrine of equivalents in the accused LG Products.²</p> <p>ITRI provides these infringement contentions before obtaining complete discovery and disclosures from LG. Specifically, LG has not produced documentation sufficient to demonstrate how each and every optical pickup head operates, and has not produced documentation sufficient to demonstrate that it has identified every LG document corresponding to accused optical pickup heads. Further, LG has “confirmed” that particular LG products utilize certain optical pickup heads that are not borne out by physical inspection. ITRI expects that LG will produce information to fully meet its discovery obligations regarding LG’s instrumentalities beyond that which is publically available. Accordingly, ITRI reserves the right to modify these infringement contentions based upon LG’s document production and required disclosures.</p>

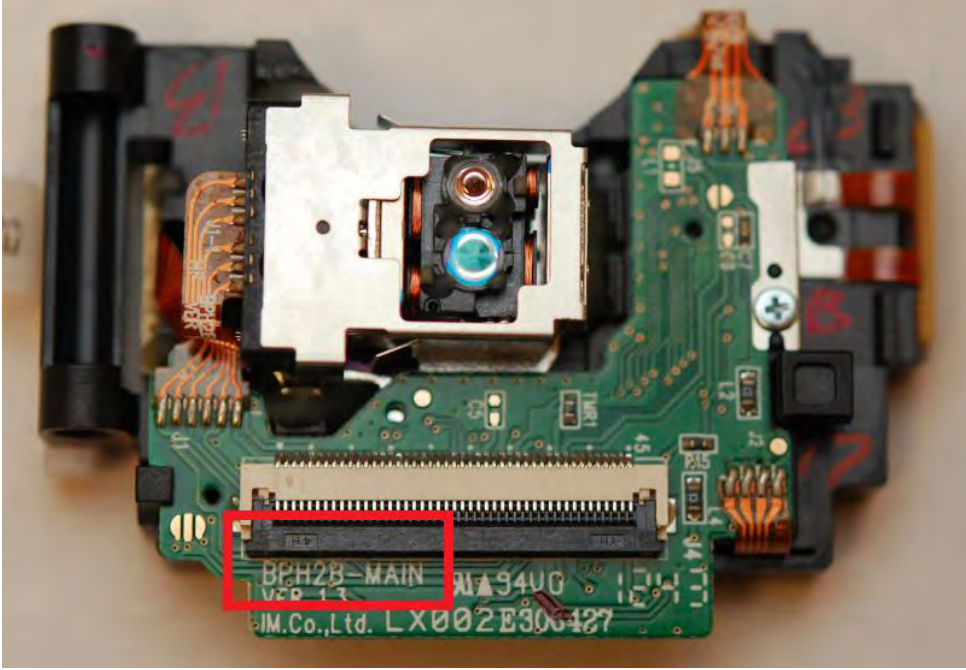
¹ ITRI contends that the preamble to this claim is not limiting in any manner. ITRI’s references to the accused product regarding the preamble are for illustration only and do not constitute an admission that the preamble is limiting.

² The LG Products often practice the claim elements in numerous alternative ways in accordance with the present chart. The LG Products should be assumed to act alone or in combination as referenced herein and interpreted in the singular or plural accordingly. LG further provides the LG Products as well as the instructions to customers/users causing them to use the accused products in an infringing manner, including, without limitation, in their default and expected uses.

To the extent each element of this claim, and the asserted claims dependent thereon are not present literally in the accused LG Products, each element is present under the doctrine of equivalents because there is no substantial difference between the elements of the asserted claims and the corresponding functionality in the accused instrumentality, *i.e.*, the corresponding functionality in the accused product performs substantially the same function, in substantially the same way to achieve substantially the same results as the claimed elements.

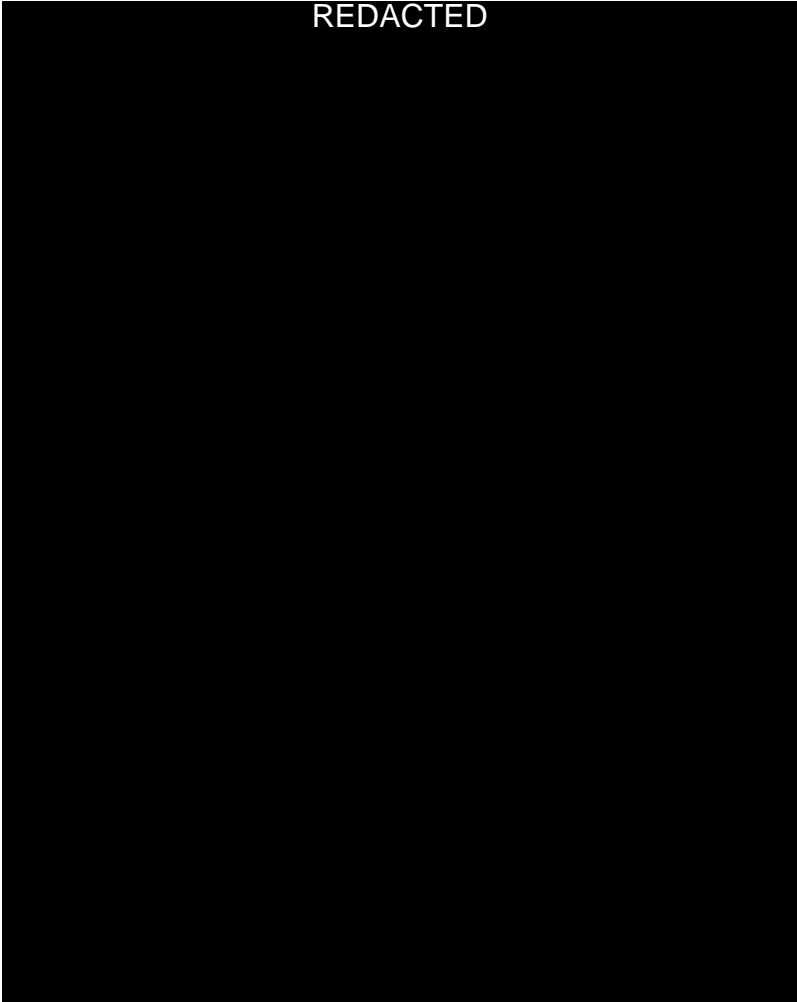
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	<p data-bbox="535 376 1801 410">ITRI contends that, upon physical inspection, the BP530 uses optical pickup unit (“OPU”) BPH2B.</p>  <p data-bbox="535 1117 957 1151"><i>Photograph of OPU from BP530</i></p> <p data-bbox="535 1224 1856 1369">The BPH2B (also referred to as the SOH-BPH2B) is used in the BPT-423 Series T-Deck, model BPT-423A. REDACTED This OPU is shown in the following images from the specification for the BPT-423 (model BPT-423A).</p>

U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	<p data-bbox="840 370 1018 402">REDACTED</p> 

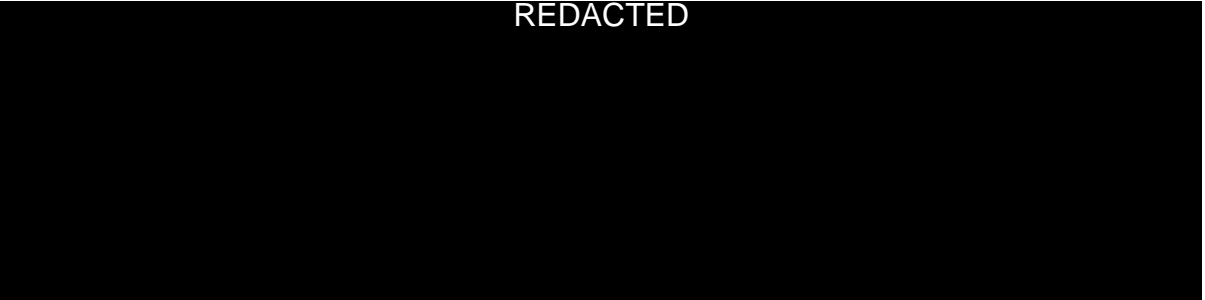
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	<div data-bbox="531 378 1850 412" style="background-color: black; color: white; text-align: center;">REDACTED</div> <div data-bbox="531 435 1850 469" style="background-color: black; color: white; text-align: center;">REDACTED</div> <div data-bbox="531 492 1568 526" style="background-color: black; color: white; text-align: center;">REDACTED</div> <div data-bbox="552 557 1820 1039" style="background-color: black; color: white; text-align: center;">REDACTED</div> <div data-bbox="531 1060 1094 1094" style="background-color: black; color: white; text-align: center;">REDACTED</div> <div data-bbox="531 1167 1850 1201" style="background-color: black; color: white; text-align: center;">REDACTED</div> <div data-bbox="531 1224 1850 1258" style="background-color: black; color: white; text-align: center;">REDACTED</div> <div data-bbox="531 1281 1293 1315" style="background-color: black; color: white; text-align: center;">REDACTED</div> <div data-bbox="575 1338 1850 1372" style="background-color: black; color: white; text-align: center;">REDACTED</div>

U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	<p data-bbox="1066 380 1247 412">REDACTED</p> 


U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	<p><i>Photograph of LG BP530 Smart 3D Blu-ray Player</i></p> 

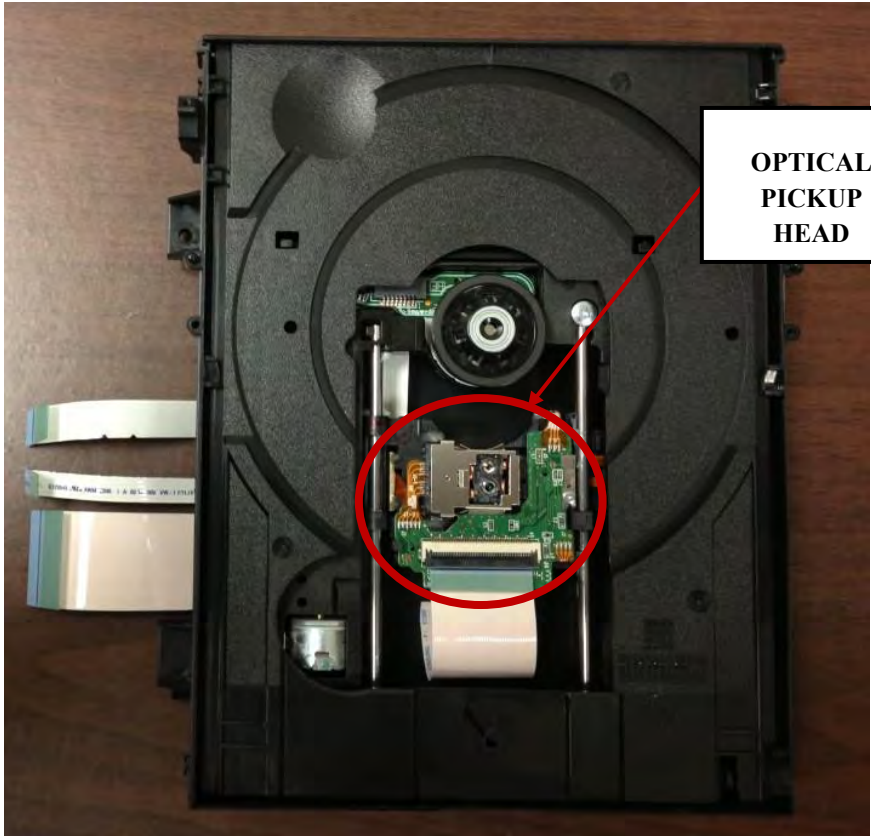
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	<p><i>Photograph of optical disk drive module</i></p> 

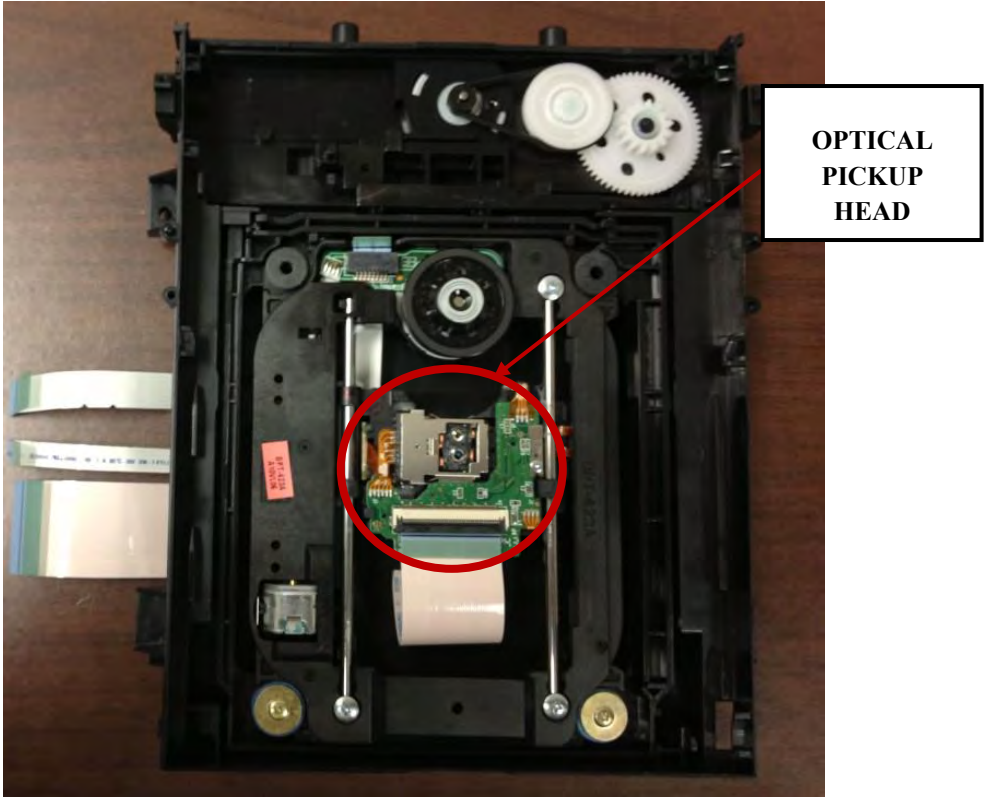
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	<p><i>Photograph showing the optical disk drive mechanism with the panel cover removed</i></p>  <p>The photograph shows the internal components of an optical disk drive. A red circle highlights the optical pickup head assembly, which is the component responsible for reading and writing data on the disk. A red arrow points from a label 'OPTICAL PICKUP HEAD' to this assembly. The drive is shown from the inside, with the panel cover removed, revealing the internal mechanism and the disk tray.</p>

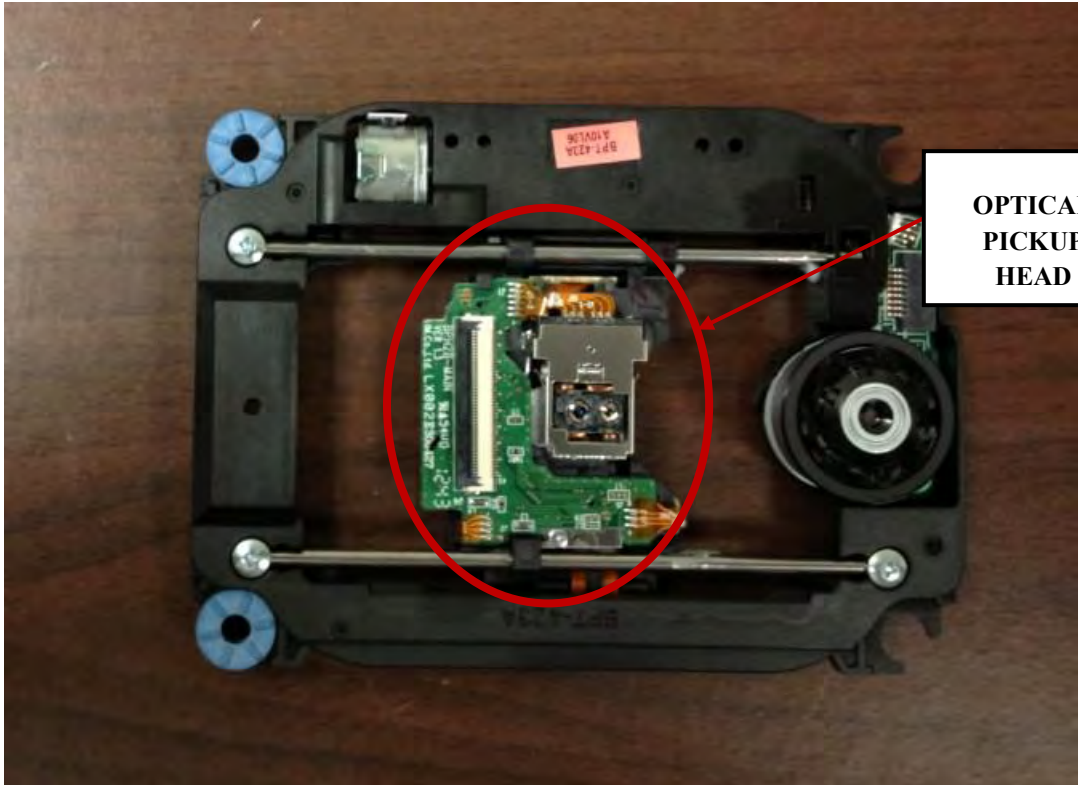
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	<p><i>Photograph showing the optical disk drive mechanism without the top panel cover</i></p>  <p>The photograph shows the internal components of an optical disk drive. A red circle highlights the optical pickup head assembly, which is mounted on a green printed circuit board. A red arrow points from a label 'OPTICAL PICKUP HEAD' to this assembly. The drive mechanism includes various gears, a lens, and other mechanical parts. The top panel cover is removed, revealing the internal structure.</p>

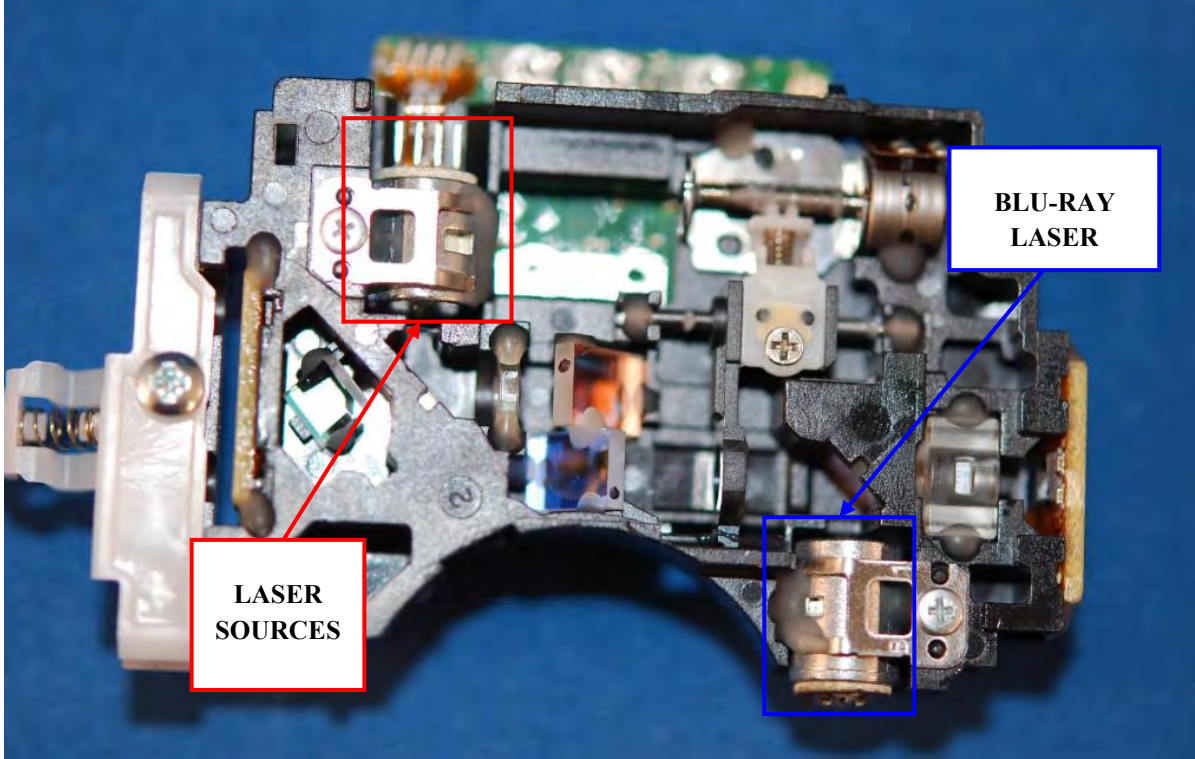
U.S. Patent No. 6,324,150

Exhibit A5




CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	<p><i>Photograph of the optical disk drive mechanism without the top and bottom panel covers</i></p>  <p>The photograph shows the internal components of an optical disk drive. A red circle highlights the optical pickup head assembly, which is mounted on a green printed circuit board. A red arrow points from a text box labeled 'OPTICAL PICKUP HEAD' to the circled area. The drive mechanism is housed in a black plastic frame with blue mounting feet visible on the left side.</p>

U.S. Patent No. 6,324,150

Exhibit A5



CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
9a. using multiple laser sources of different wavelengths for reading/writing data on optical recording media of varying densities, comprising:	

U.S. Patent No. 6,324,150**Exhibit A5**

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)														
	<div data-bbox="548 375 642 415" style="border: 1px solid red; padding: 2px;">BP530</div> <div data-bbox="1289 383 1478 407" style="text-align: right;">  DOWNLOAD PDF </div> <div data-bbox="1577 383 1822 407" style="text-align: right;">  COLLAPSE ALL SPECS </div> <hr/> <div data-bbox="556 456 840 475" style="color: red;">  PROFILE & PLAYABLE DISC </div> <table border="1" data-bbox="556 500 1835 740" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">BD Profile</td><td style="text-align: right; padding: 2px;">5.0</td></tr> <tr> <td style="padding: 2px;">USB Playback</td><td style="text-align: right; padding: 2px;">Yes</td></tr> <tr> <td style="padding: 2px;">External HDD Playback</td><td style="text-align: right; padding: 2px;">Yes (via USB)</td></tr> <tr> <td style="padding: 2px;">BD-ROM/BD-R/BD-RE</td><td style="text-align: right; padding: 2px;">Yes</td></tr> <tr> <td style="padding: 2px;">DVD-ROM/DVD±R/DVD±RW</td><td style="text-align: right; padding: 2px;">Yes</td></tr> <tr> <td style="padding: 2px;">Audio CD/CD-R/CD-RW</td><td style="text-align: right; padding: 2px;">Yes</td></tr> <tr> <td style="padding: 2px;">DTS-CD</td><td style="text-align: right; padding: 2px;">Yes</td></tr> </table> <p data-bbox="535 760 1346 787">Source: http://www.lg.com/us/blu-ray-players/lg-BP530-blu-ray-dvd-player</p>	BD Profile	5.0	USB Playback	Yes	External HDD Playback	Yes (via USB)	BD-ROM/BD-R/BD-RE	Yes	DVD-ROM/DVD±R/DVD±RW	Yes	Audio CD/CD-R/CD-RW	Yes	DTS-CD	Yes
BD Profile	5.0														
USB Playback	Yes														
External HDD Playback	Yes (via USB)														
BD-ROM/BD-R/BD-RE	Yes														
DVD-ROM/DVD±R/DVD±RW	Yes														
Audio CD/CD-R/CD-RW	Yes														
DTS-CD	Yes														

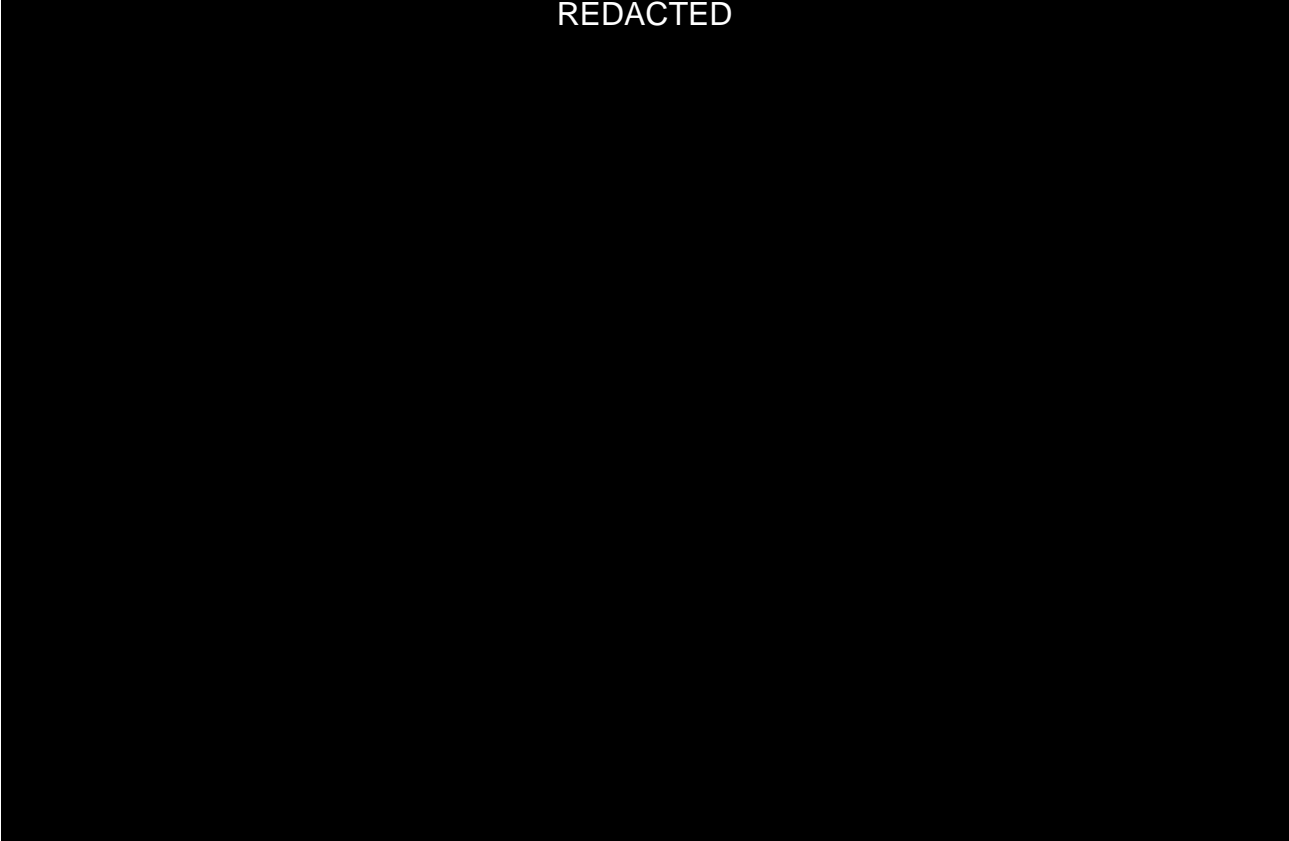
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)														
	<p data-bbox="548 396 1717 428">3D-CAPABLE BLU-RAY DISC™ PLAYER WITH SMART TV AND MAGIC REMOTE</p> <p data-bbox="548 444 648 477">BP730</p> <p data-bbox="1583 453 1827 477"> COLLAPSE ALL SPECS</p> <hr/> <p data-bbox="548 521 831 545"> PROFILE & PLAYABLE DISC</p> <table border="1" data-bbox="548 570 1841 802"> <tbody> <tr> <td>BD Profile</td><td>5.0</td></tr> <tr> <td>USB Playback</td><td>Yes</td></tr> <tr> <td>External HDD Playback</td><td>Yes (via USB)</td></tr> <tr> <td>BD-ROM/BD-R/BD-RE</td><td>Yes</td></tr> <tr> <td>DVD-ROM/DVD±R/DVD±RW</td><td>Yes</td></tr> <tr> <td>Audio CD/CD-R/CD-RW</td><td>Yes</td></tr> <tr> <td>DTS-CD</td><td>Yes</td></tr> </tbody> </table> <p data-bbox="535 829 1295 859">Source: http://www.lg.com/us/blu-ray-players/lg-BP730-blu-ray-player</p>	BD Profile	5.0	USB Playback	Yes	External HDD Playback	Yes (via USB)	BD-ROM/BD-R/BD-RE	Yes	DVD-ROM/DVD±R/DVD±RW	Yes	Audio CD/CD-R/CD-RW	Yes	DTS-CD	Yes
BD Profile	5.0														
USB Playback	Yes														
External HDD Playback	Yes (via USB)														
BD-ROM/BD-R/BD-RE	Yes														
DVD-ROM/DVD±R/DVD±RW	Yes														
Audio CD/CD-R/CD-RW	Yes														
DTS-CD	Yes														

U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	<p data-bbox="1087 375 1262 407">REDACTED</p> 





U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)						
	<div data-bbox="562 402 1814 435">3D-CAPABLE BLU-RAY DISC™ HOME THEATER SYSTEM WITH SMART TV</div> <div data-bbox="562 451 699 488">BH6730S</div> <div data-bbox="1577 459 1814 480">COLLAPSE ALL SPECS</div> <div data-bbox="562 526 684 547">+ GENERAL</div> <div data-bbox="562 586 695 607">+ FEATURES</div> <div data-bbox="562 646 768 667">- SUPPORTED MEDIA</div> <table data-bbox="615 678 1369 792"> <tr> <td>Blu-ray</td><td>Yes</td></tr> <tr> <td>CD / CD-R / CD-RW</td><td>Yes</td></tr> <tr> <td>DVD / DVD±R / DVD±RW</td><td>Yes</td></tr> </table> <div data-bbox="537 980 1470 1008">Source: http://www.lg.com/us/home-theater-systems/lg-BH6730S-home-theater-system</div>	Blu-ray	Yes	CD / CD-R / CD-RW	Yes	DVD / DVD±R / DVD±RW	Yes
Blu-ray	Yes						
CD / CD-R / CD-RW	Yes						
DVD / DVD±R / DVD±RW	Yes						

U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)						
	<p data-bbox="556 391 1816 459">3D-CAPABLE 9.1 CH ARAMID FIBER BLU-RAY DISC™ HOME THEATER SYSTEM WITH SMART TV</p> <p data-bbox="556 475 709 511">BH9430PW</p> <p data-bbox="1577 483 1816 505"> COLLAPSE ALL SPECS</p> <hr/> <p data-bbox="556 553 680 574"> GENERAL</p> <hr/> <p data-bbox="556 613 690 634"> FEATURES</p> <hr/> <p data-bbox="556 673 766 695"> SUPPORTED MEDIA</p> <table border="1" data-bbox="611 698 1339 824"> <tbody> <tr> <td data-bbox="632 724 688 745">Blu-ray</td><td data-bbox="1268 724 1304 745">Yes</td></tr> <tr> <td data-bbox="632 756 779 777">CD / CD-R / CD-RW</td><td data-bbox="1268 756 1304 777">Yes</td></tr> <tr> <td data-bbox="632 789 821 810">DVD / DVD±R / DVD±RW</td><td data-bbox="1268 789 1304 810">Yes</td></tr> </tbody> </table> <p data-bbox="535 976 1495 1003">Source: http://www.lg.com/us/home-theater-systems/lg-BH9430PW-home-theater-system</p>	Blu-ray	Yes	CD / CD-R / CD-RW	Yes	DVD / DVD±R / DVD±RW	Yes
Blu-ray	Yes						
CD / CD-R / CD-RW	Yes						
DVD / DVD±R / DVD±RW	Yes						

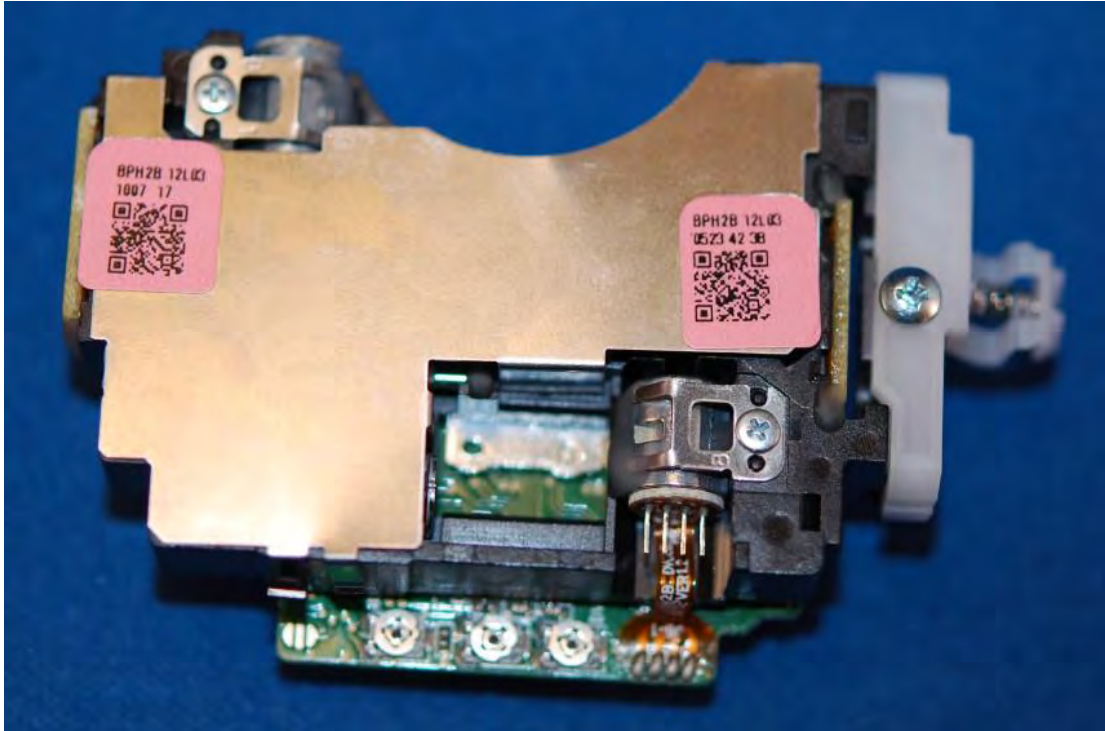
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)						
	<div data-bbox="577 397 1795 462">3D-CAPABLE 9.1 CH ARAMID FIBER BLU-RAY DISC™ HOME THEATER SYSTEM WITH SMART TV</div> <div data-bbox="577 479 724 527">BH9431PW</div> <div data-bbox="1554 487 1795 511">COLLAPSE ALL SPECS</div> <div data-bbox="577 552 703 576">+ GENERAL</div> <div data-bbox="577 609 703 633">+ FEATURES</div> <div data-bbox="577 665 787 690">- SUPPORTED MEDIA</div> <table border="1" data-bbox="640 690 1333 803"> <tbody> <tr> <td>Blu-ray</td><td>Yes</td></tr> <tr> <td>CD / CD-R / CD-RW</td><td>Yes</td></tr> <tr> <td>DVD / DVD±R / DVD±RW</td><td>Yes</td></tr> </tbody> </table> <div data-bbox="535 925 1501 958">Source: http://www.lg.com/us/home-theater-systems/lg-BH9431PW-home-theater-system</div>	Blu-ray	Yes	CD / CD-R / CD-RW	Yes	DVD / DVD±R / DVD±RW	Yes
Blu-ray	Yes						
CD / CD-R / CD-RW	Yes						
DVD / DVD±R / DVD±RW	Yes						

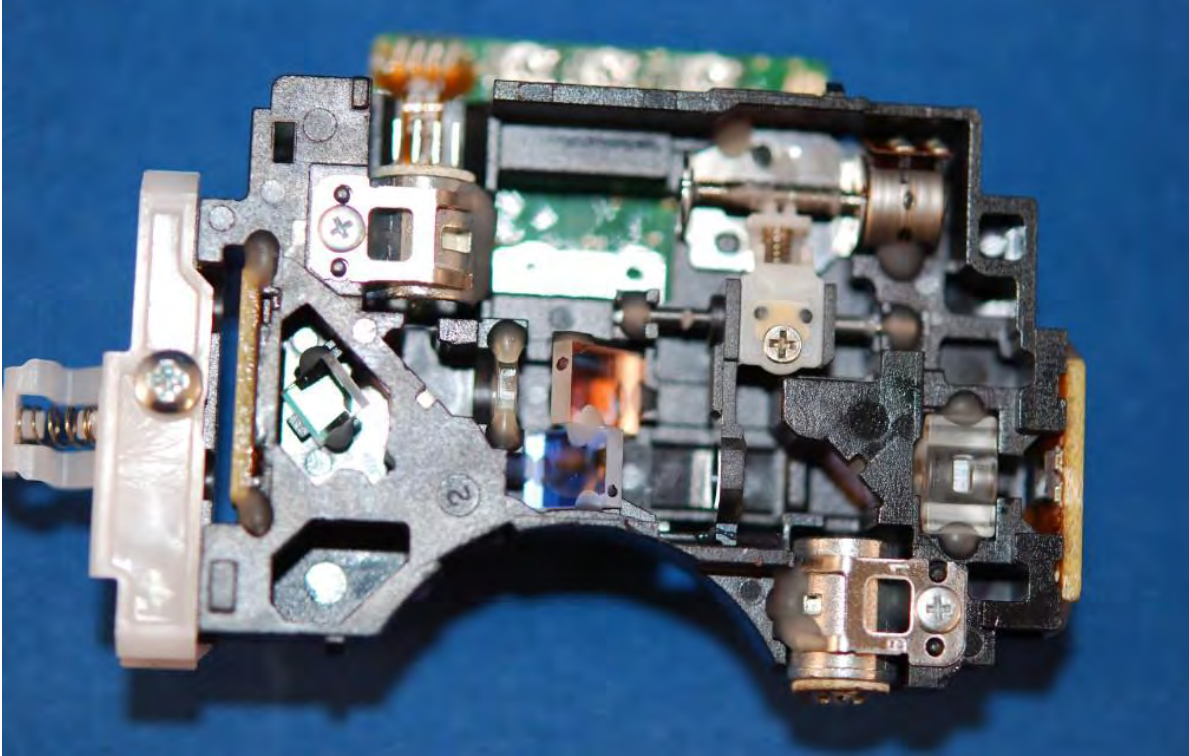
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	<p data-bbox="533 376 1199 410"><i>Photograph of the optical pick up head from bottom</i></p>  A photograph of an optical pickup head assembly, viewed from the bottom. The assembly is primarily composed of a large, flat, gold-colored metal plate. Two small, rectangular pink labels are affixed to the top surface of this plate; each label contains a QR code and the text "BPH2B 12L 03" and "1007 17". Below the gold plate, a green printed circuit board (PCB) is visible, featuring several surface-mount components and solder joints. A complex mechanical structure, including a lens and various metal components, is mounted on the bottom of the assembly. A white plastic component is visible on the right side. The entire assembly is set against a solid blue background.

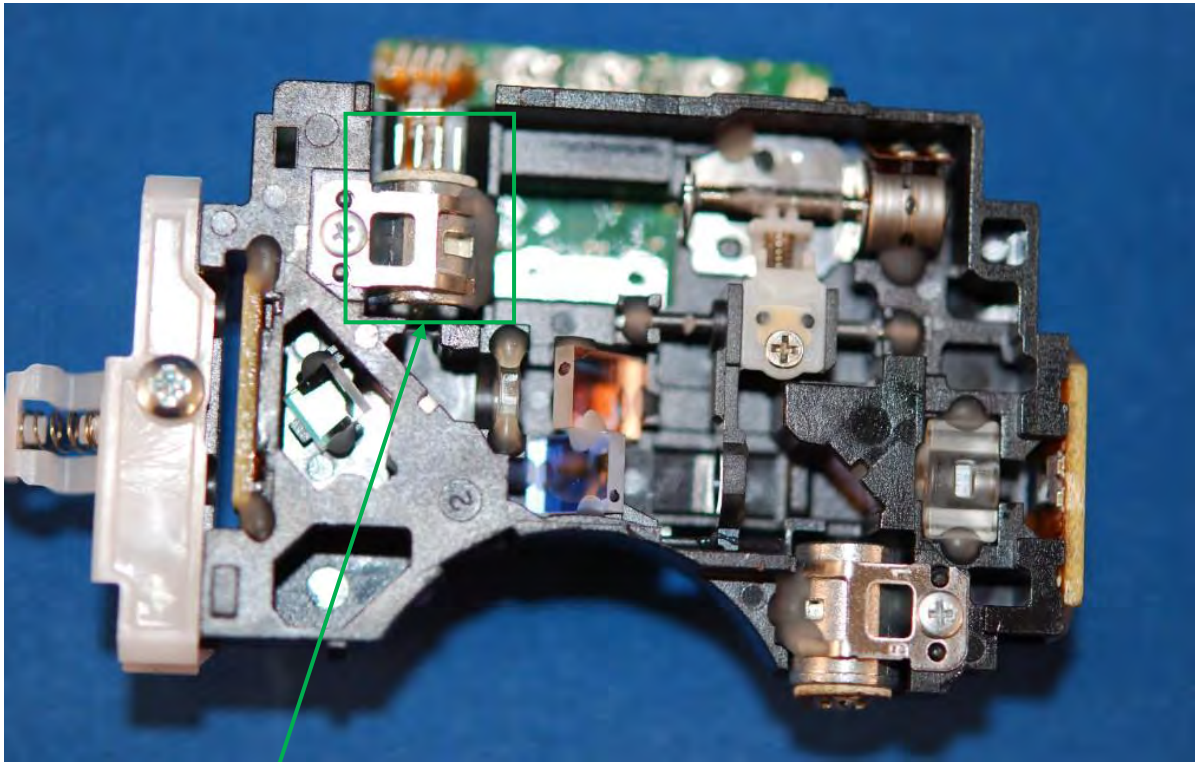
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	<p><i>Photograph of the optical pickup head from bottom with the back plate removed</i></p> 

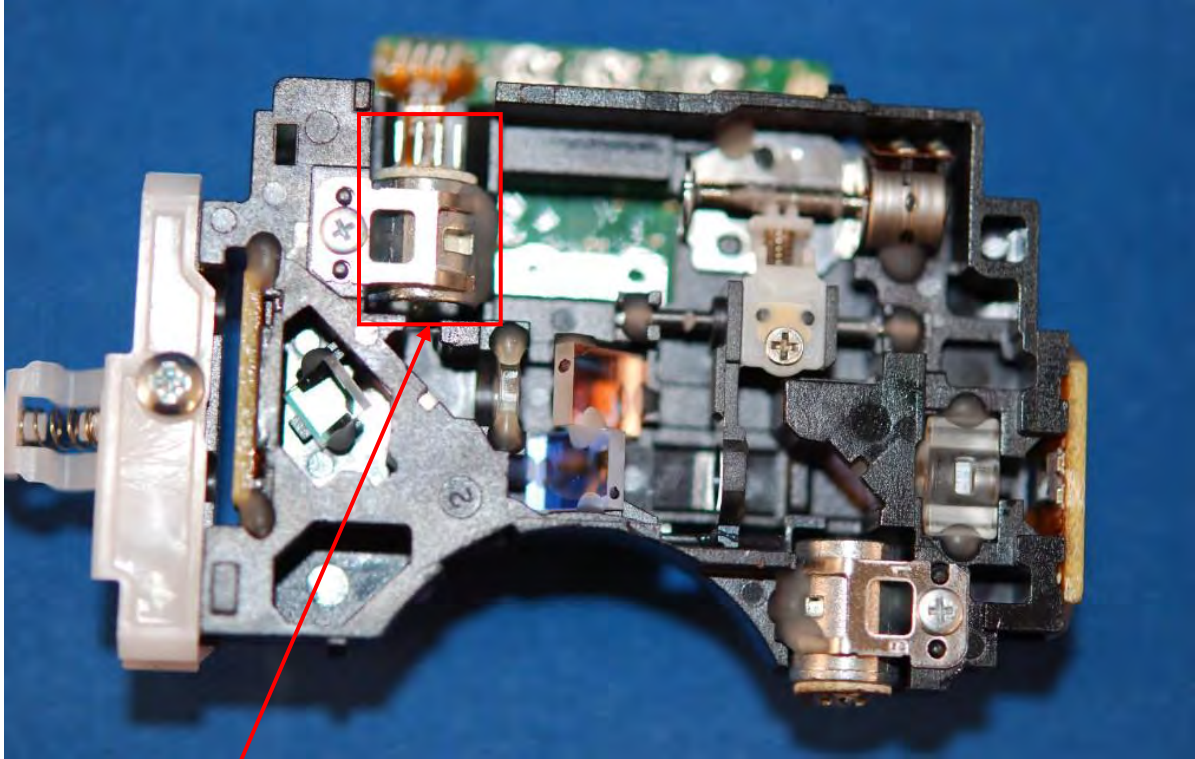
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
9b. a first laser beam generator and	 <p data-bbox="688 1182 1058 1338">FIRST AND SECOND LASER BEAM GENERATORS</p>

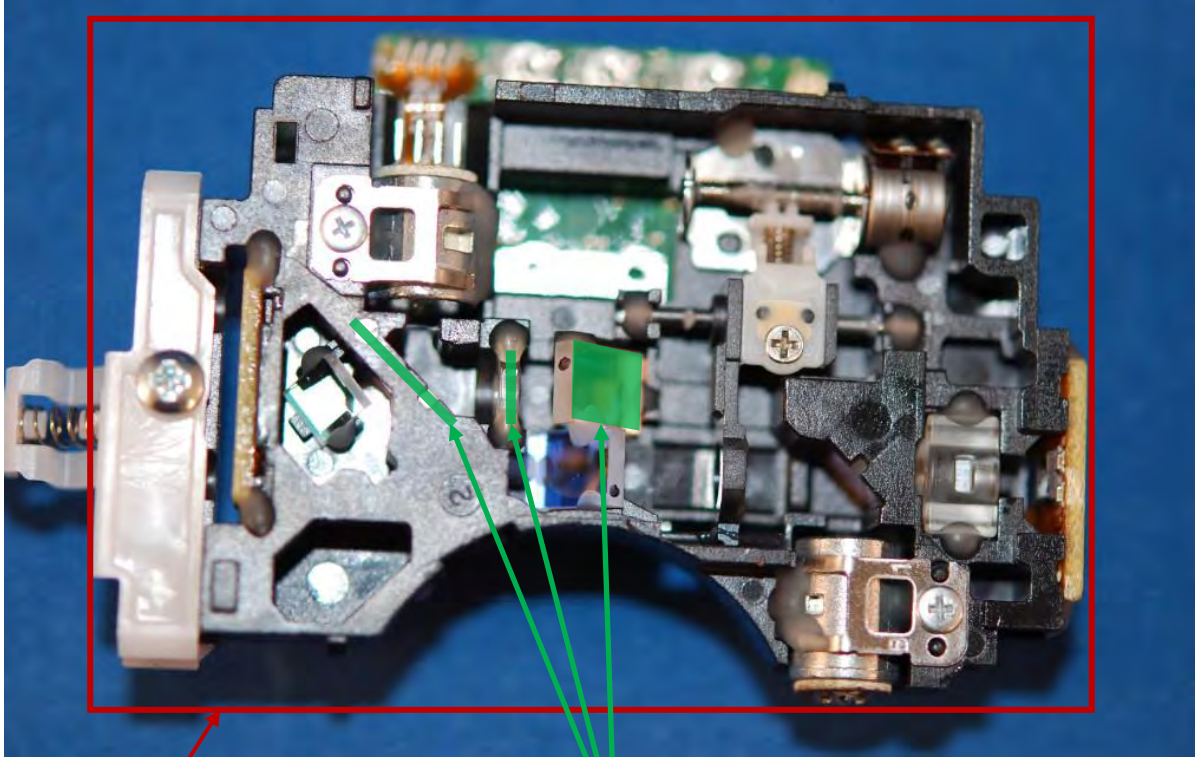
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
<p>9c. a second laser beam generator, for generating a first laser beam and a second laser beam of different wavelengths,</p>	 <p>FIRST AND SECOND LASER BEAM GENERATORS</p> <p>CD and DVD use 780 nm and 650nm red lasers, respectively, Blu-ray uses a 405 nm blue laser</p>

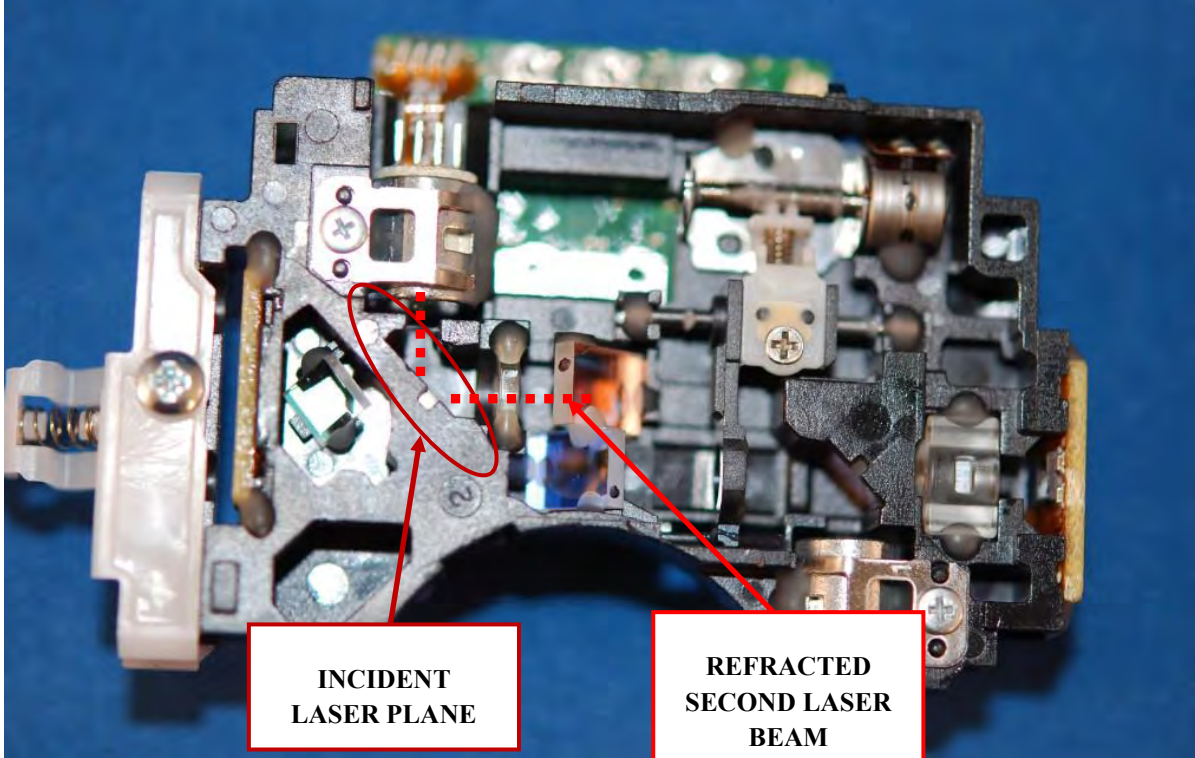
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
9d. a beam shaper, allocated in optical paths of said first and second laser beams, and formed with a plurality of planes locating in different angles, comprising:	 <p data-bbox="604 1230 894 1325">BEAM SHAPER</p> <p data-bbox="1050 1195 1369 1328">PLURALITY OF PLANES</p>

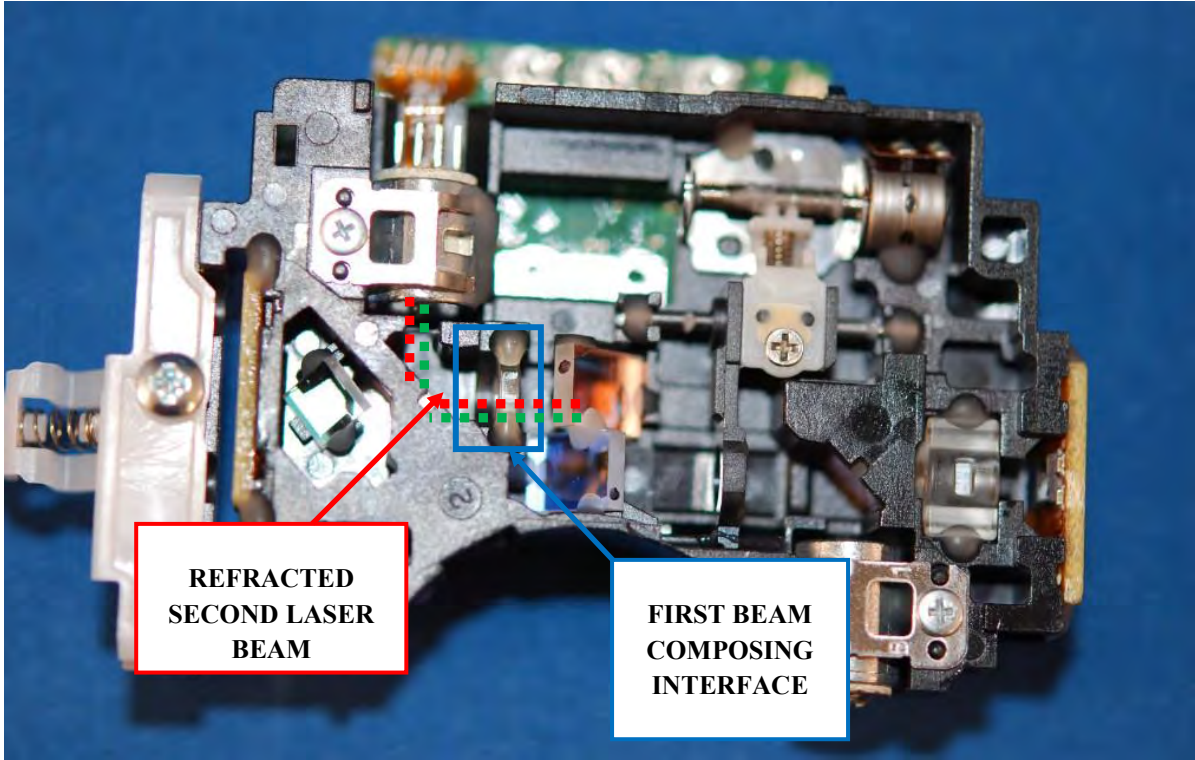
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
9e. an incident laser plane for refracting said second laser beam, to generate a refracted second laser beam;	 <p data-bbox="842 992 1113 1122">INCIDENT LASER PLANE</p> <p data-bbox="1245 984 1516 1130">REFRACTED SECOND LASER BEAM</p> <p data-bbox="604 1146 1352 1276">Legend: SECOND LASER BEAM ■■■■■■■■</p>

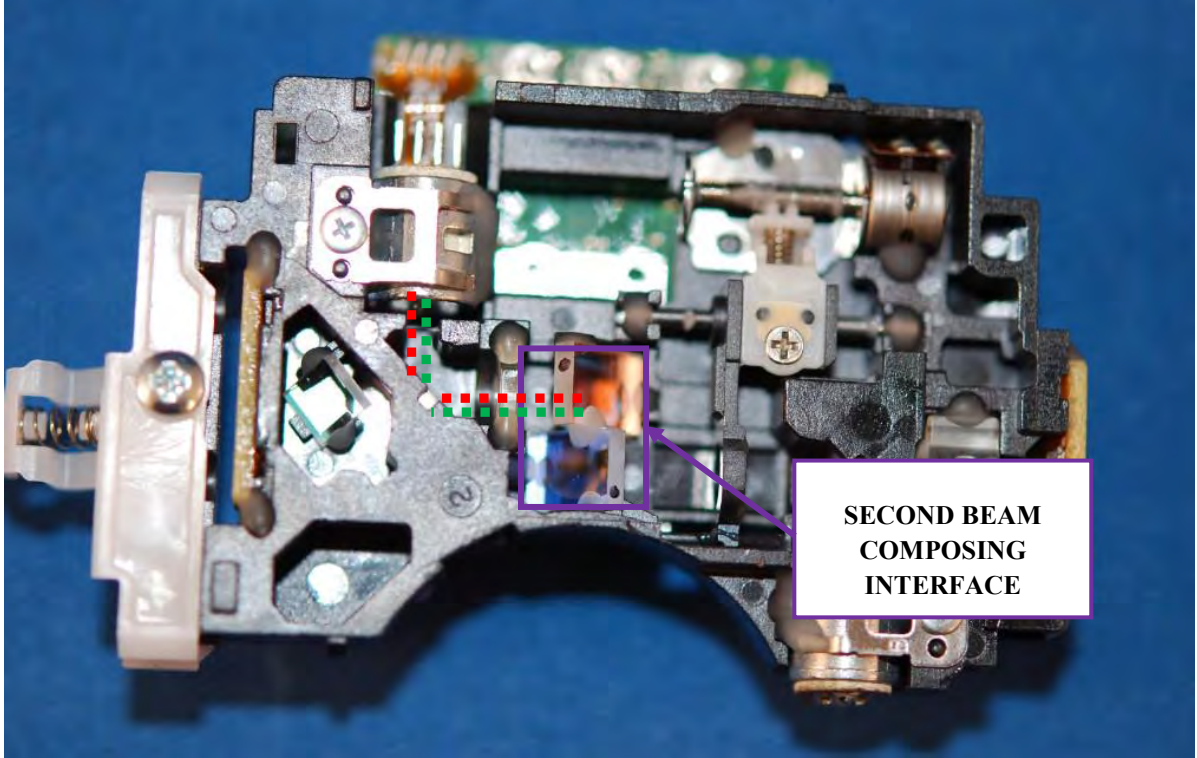
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
<p>9f. a first beam-composing interface for composing said refracted second laser beam with said first laser beam into an optical output path;</p>	 <p>REFRACTED SECOND LASER BEAM</p> <p>FIRST BEAM COMPOSING INTERFACE</p> <p>Legend:</p> <p>SECOND LASER BEAM ■■■■■■</p> <p>FIRST LASER BEAM ■■■■■■</p>

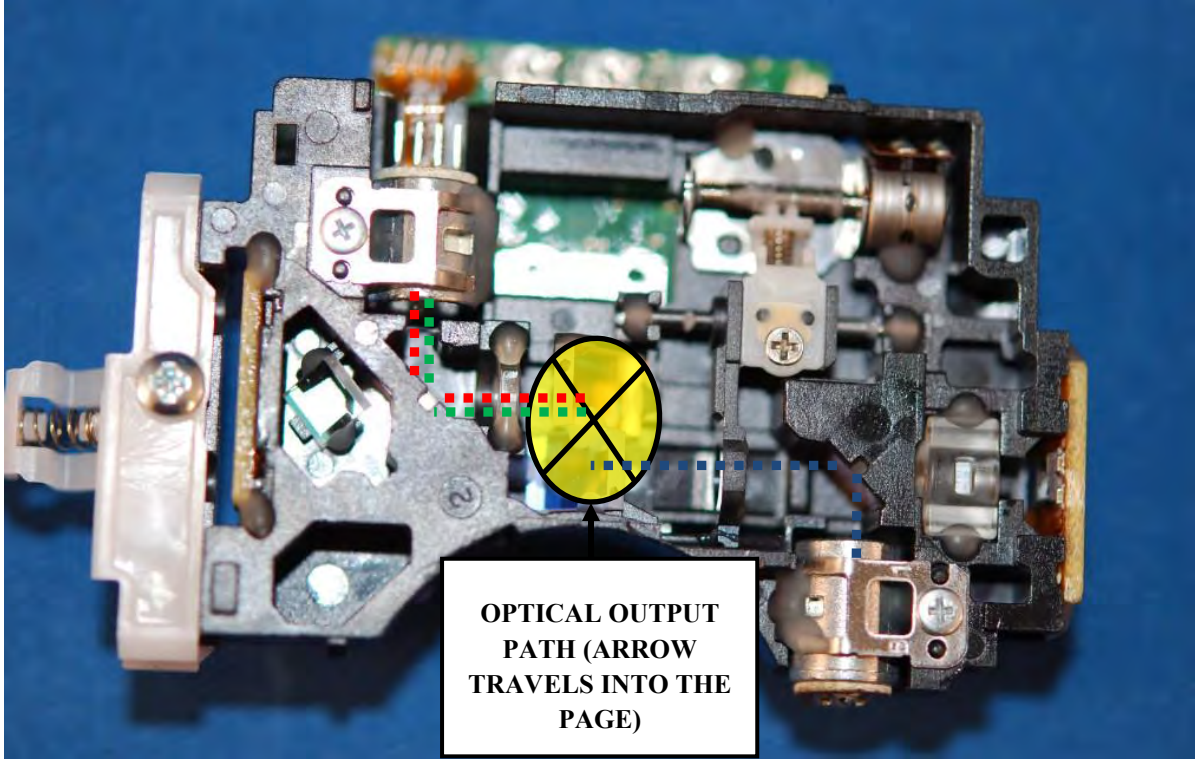
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
9g. a second beam-composing interface for composing said first and second laser beams,	 <p data-bbox="1388 834 1682 987">SECOND BEAM COMPOSING INTERFACE</p> <p data-bbox="619 1161 1352 1274">Legend: SECOND LASER BEAM FIRST LASER BEAM</p>

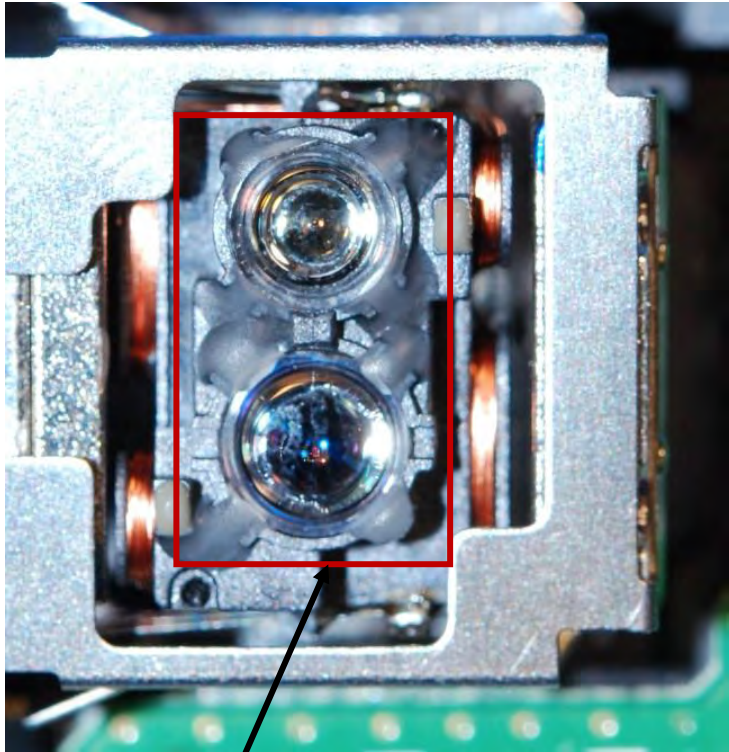
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
<p>9h. after they are being composed by said first beam-composing interface, with a third laser beam into said optical output path;</p>	 <p data-bbox="1039 933 1348 1123">OPTICAL OUTPUT PATH (ARROW TRAVELS INTO THE PAGE)</p> <div data-bbox="604 1166 1451 1328"> <p>Legend:</p> <p>SECOND LASER BEAM ■■■■■■</p> <p>FIRST LASER BEAM ■■■■■■</p> <p>THIRD LASER BEAM (BLUE-RAY) ■■■■■■</p> </div>

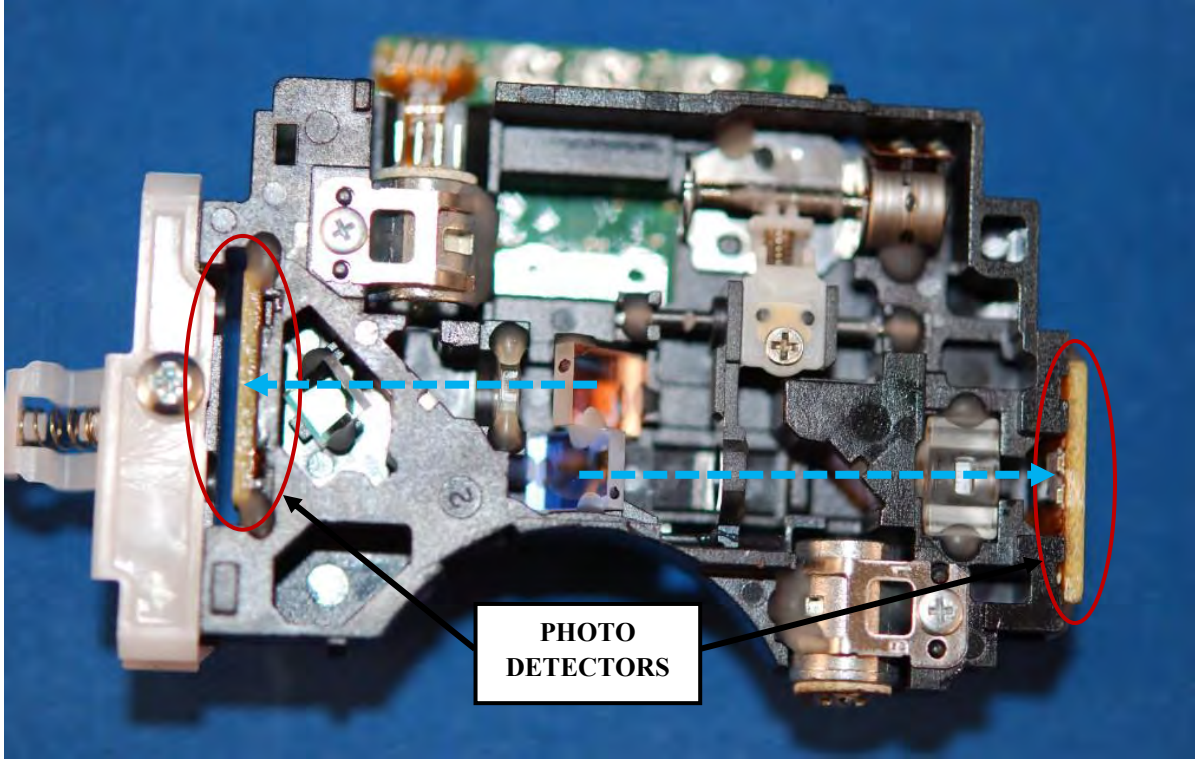
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
9i. an objective lens for focusing laser beams in said optical output path onto said optical recording media as an reading/writing spot; and	 <p data-bbox="919 1149 1182 1297">AT LEAST ONE OBJECTIVE LENS</p>

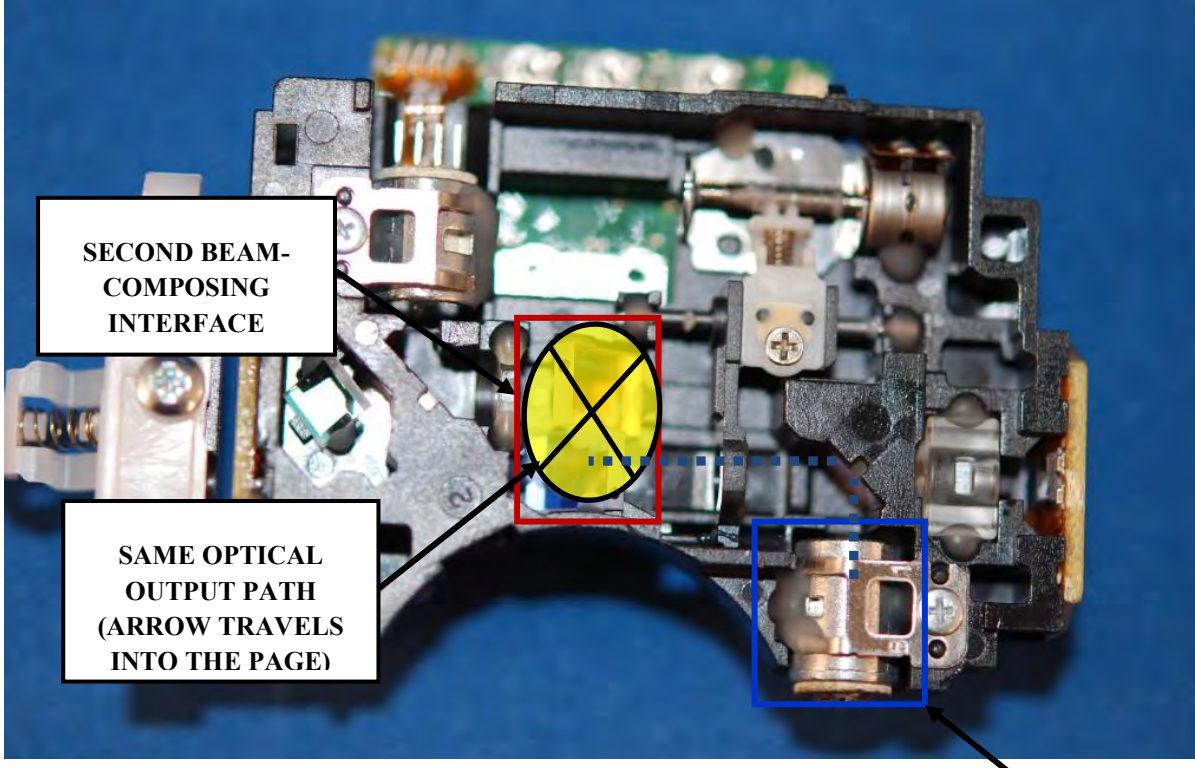
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
<p>9j. a photo detector for transforming a reflective laser beam returning from said optical recording media into corresponding signals and accomplishing data retrieval;</p>	 <p data-bbox="1071 974 1291 1071">PHOTO DETECTORS</p> <div data-bbox="598 1161 1354 1291"> <p>Legend: REFLECTIVE LASER BEAM </p> </div>

U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
<p>9k. wherein said third laser beam is an incident laser beam generated by a third laser beam generator, refracted to said second beam-composing interface and composed into same optical output path.</p>	 <p>SECOND BEAM-COMPOSING INTERFACE</p> <p>SAME OPTICAL OUTPUT PATH (ARROW TRAVELS INTO THE PAGE)</p> <p>Legend: THIRD LASER BEAM</p> <p>THIRD LASER BEAM GENERATOR (BLU-RAY)</p>

U.S. Patent No. 7,542,384**Exhibit B1**

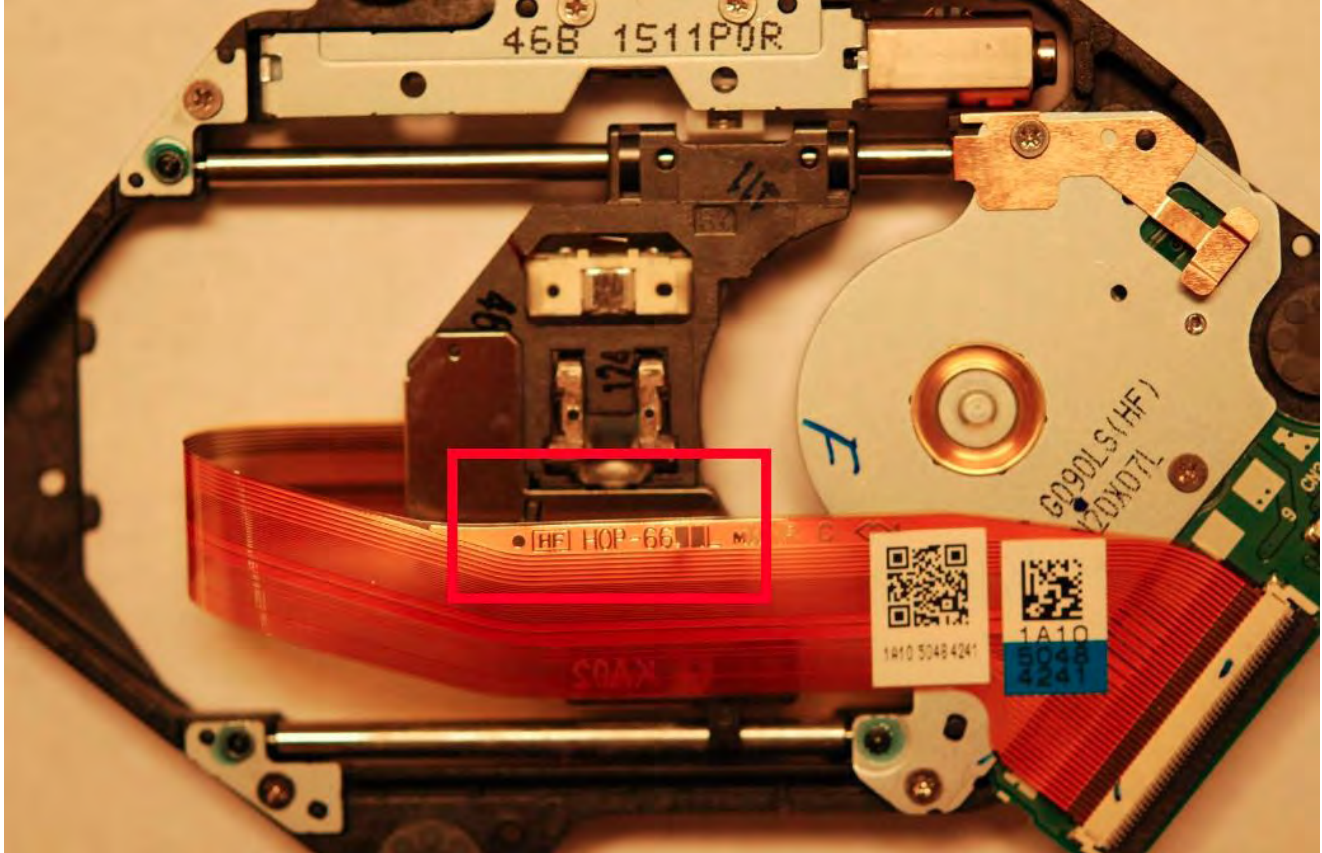
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12. An <u>objective lens actuator</u> , comprising: ¹	<p>Each element of this claim, except where noted otherwise, and each element of the asserted claims dependent thereon, is present literally and/or under the doctrine of equivalents in the accused LG Products.²</p> <p>ITRI provides these infringement contentions before obtaining complete discovery and disclosures from LG. Specifically, LG has not produced documentation sufficient to demonstrate how each and every optical pickup head operates, and has not produced documentation sufficient to demonstrate that it has identified every LG document corresponding to accused optical pickup heads. Further, LG has “confirmed” that particular LG products utilize certain optical pickup heads that are not borne out by physical inspection. ITRI expects that LG will produce information to fully meet its discovery obligations regarding LG’s instrumentalities beyond that which is publically available. Accordingly, ITRI reserves the right to modify these infringement contentions based upon LG’s document production and required disclosures.</p>

¹ ITRI contends that the preamble to this claim is not limiting in any manner. ITRI’s references to the accused product regarding the preamble are for illustration only and do not constitute an admission that the preamble is limiting.

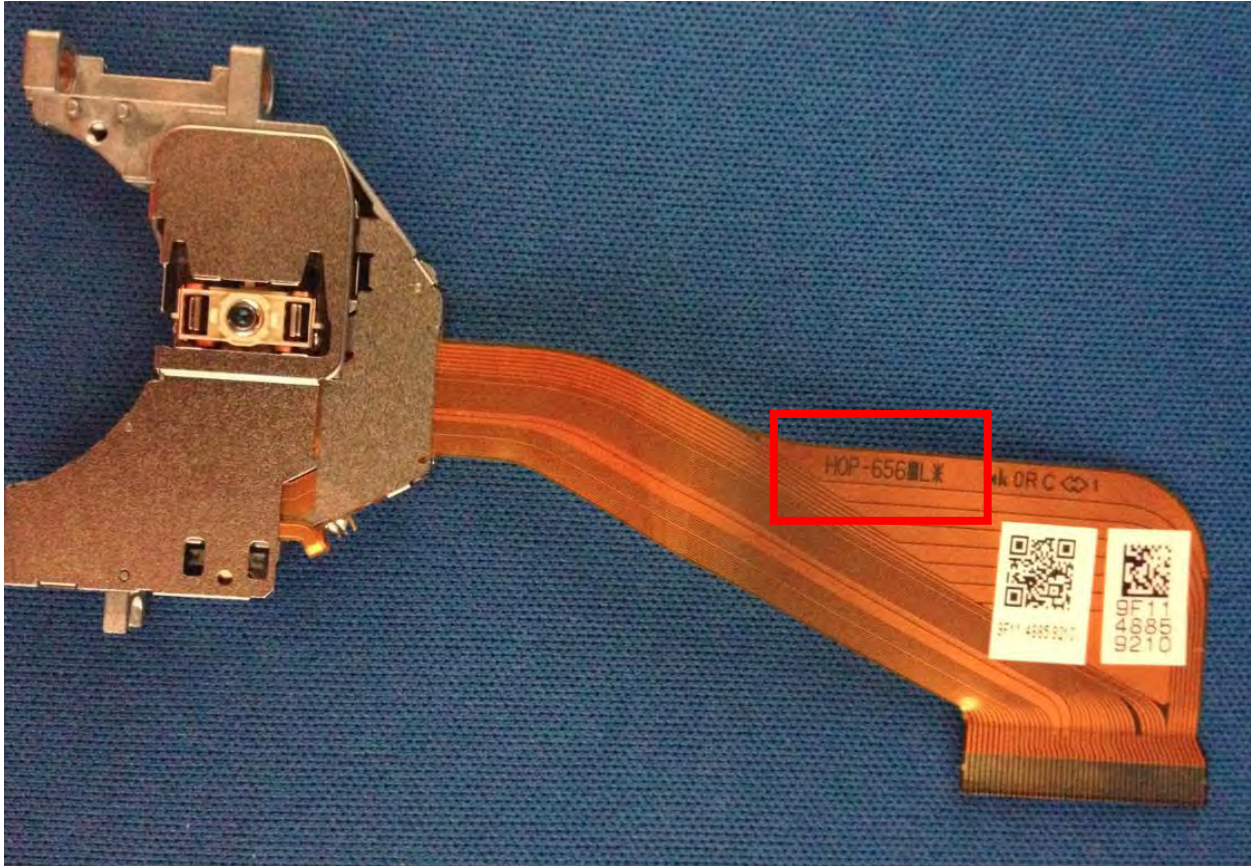
² The LG Products often practice the claim elements in numerous alternative ways in accordance with the present chart. The LG Products should be assumed to act alone or in combination as referenced herein and interpreted in the singular or plural accordingly. LG further provides the LG Products as well as the instructions to customers/users causing them to use the accused products in an infringing manner, including, without limitation, in their default and expected uses.

To the extent each element of this claim, and the asserted claims dependent thereon are not present literally in the accused LG Products, each element is present under the doctrine of equivalents because there is no substantial difference between the elements of the asserted claims and the corresponding functionality in the accused instrumentality, *i.e.*, the corresponding functionality in the accused product performs substantially the same function, in substantially the same way to achieve substantially the same results as the claimed elements.

U.S. Patent No. 7,542,384**Exhibit B1**

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
	<p>Upon physical inspection, the following products use optical pickup units (“OPUs”) that are identical for infringement analysis: GP08LU30, GP08LU11, GP10NB20, GT30L, and GP40LB10. As shown below, the GP40LB10 uses OPU HOP-6611L:</p> 

U.S. Patent No. 7,542,384**Exhibit B1**

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
	<p data-bbox="558 365 1289 397">As shown below, the GP08LU11 uses OPU HOP-6561L.</p>  <p data-bbox="558 1323 1940 1404">Because these OPUs are physically similar, all products that use either the HOP-6611L or HOP-65611L are infringe in a similar manner to the products physically inspected for this chart.</p>

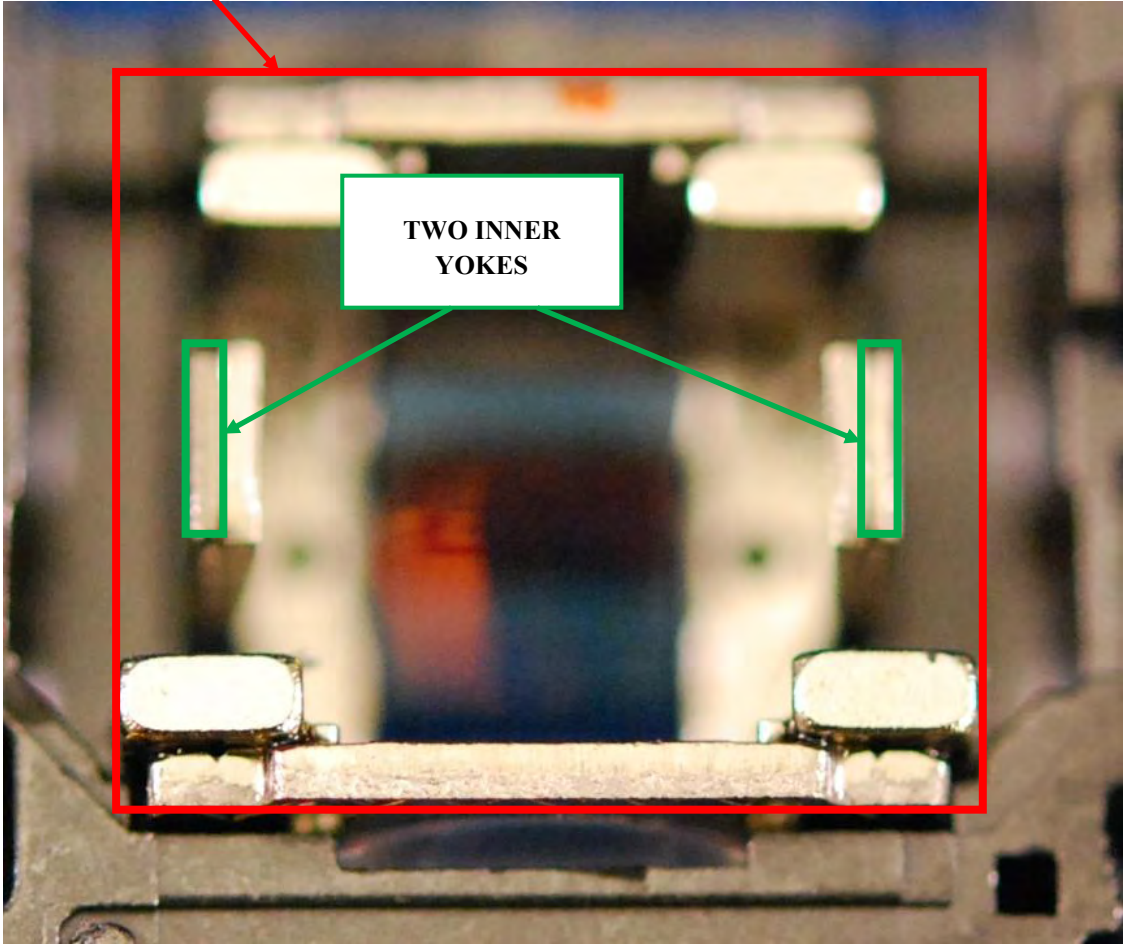
U.S. Patent No. 7,542,384

Exhibit B1

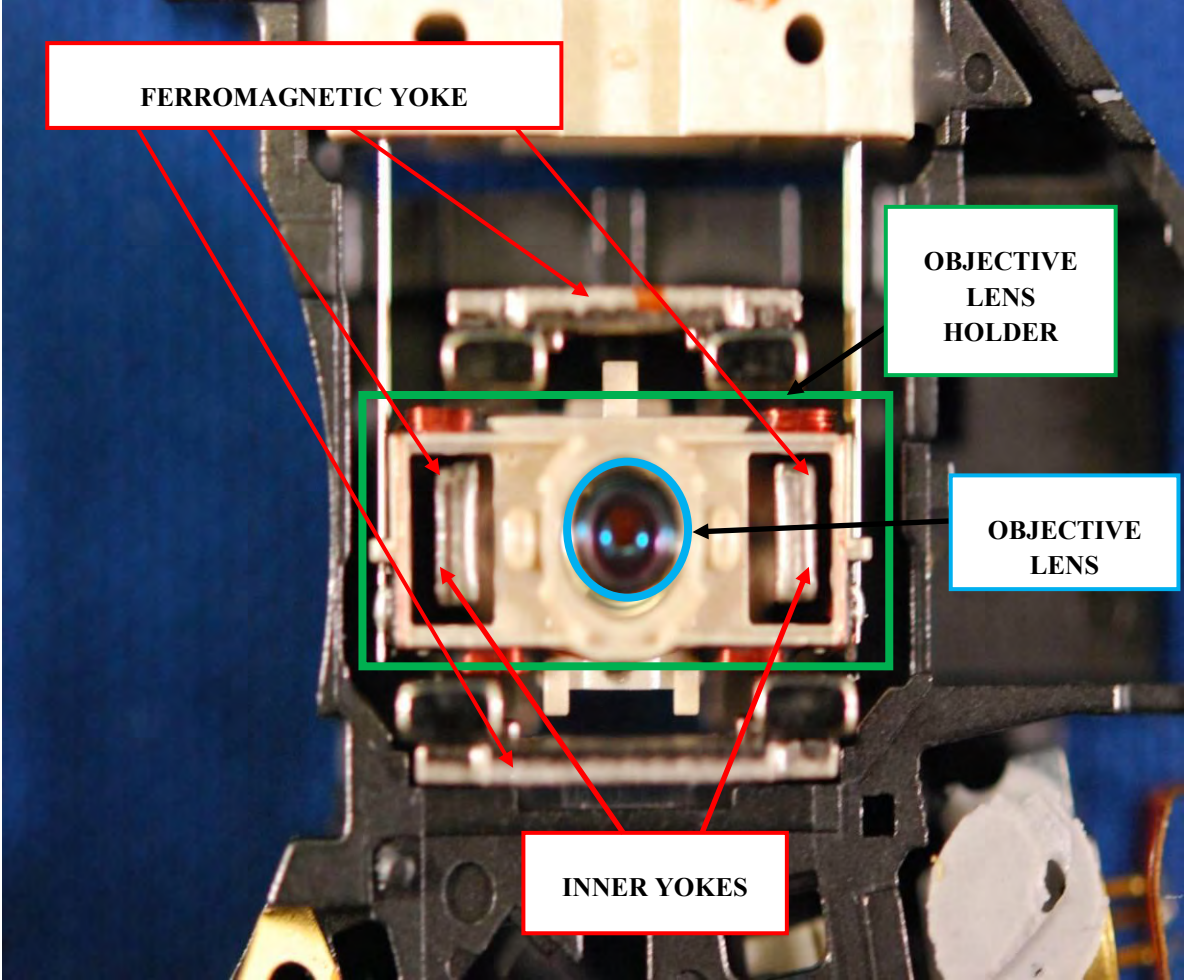
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
	<div data-bbox="558 370 1932 402">REDACTED</div> <div data-bbox="558 410 919 443"></div> <div data-bbox="569 475 1904 808">REDACTED</div> <div data-bbox="558 846 1932 878"></div> <div data-bbox="558 886 686 919"></div>

U.S. Patent No. 7,542,384

Exhibit B1

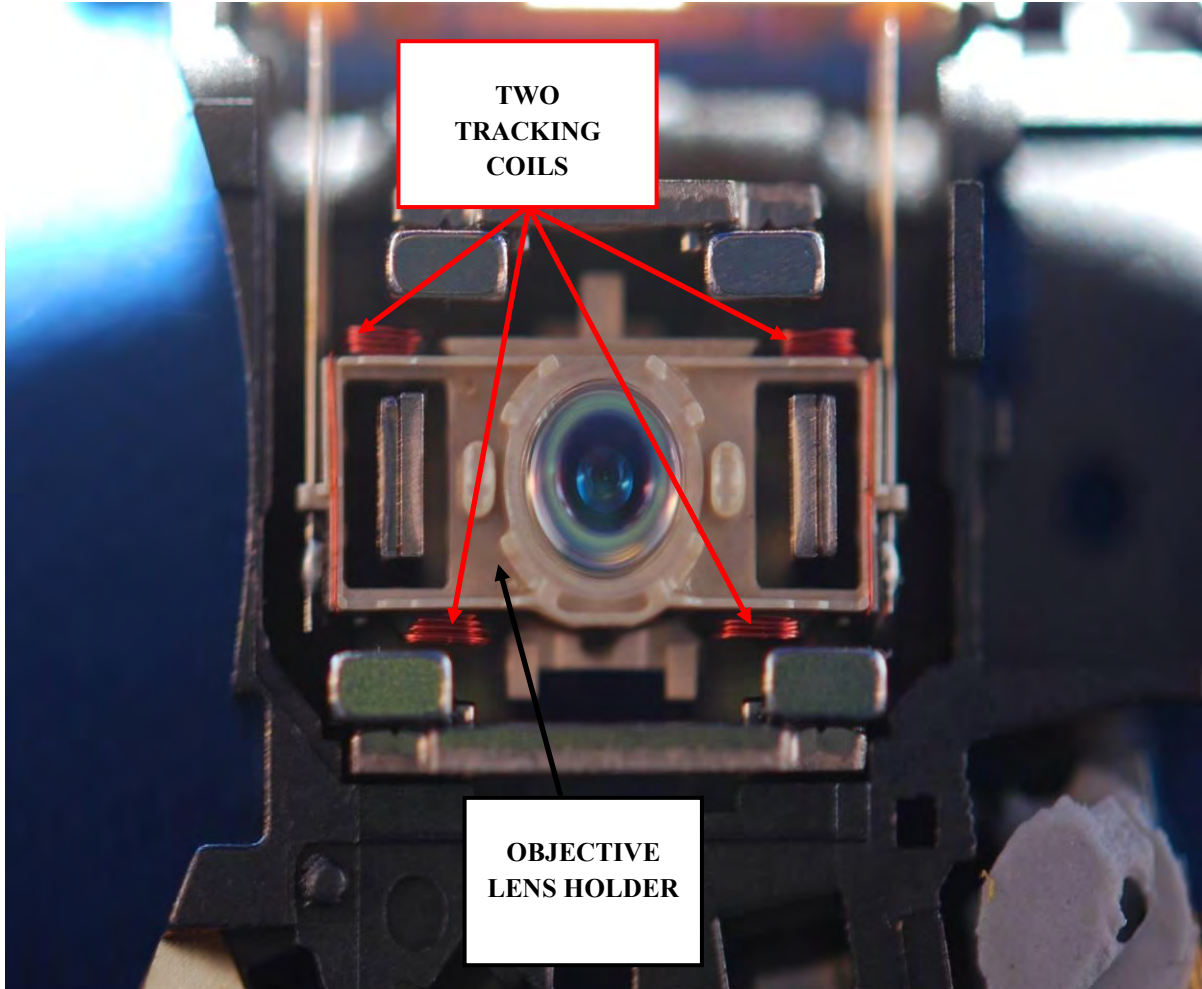
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12a. a <u>ferromagnetic yoke</u> including <u>two inner yokes</u> ;	<p data-bbox="835 342 1354 370">FERROMAGNETIC YOKE from GP08LU30</p> 

U.S. Patent No. 7,542,384**Exhibit B1**

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12b. an <u>objective lens holder</u> movably located on the ferromagnetic yoke corresponding to the <u>inner yokes</u> for holding an <u>objective lens</u> ;	 <p>The photograph shows a cross-section of a mechanical assembly. A central component, the objective lens holder, is highlighted with a green rectangular box. Inside this holder is a circular objective lens, which is circled in blue. The holder is mounted on a larger, light-colored ferromagnetic yoke. Two vertical inner yokes are visible within the main yoke, flanking the lens holder. Red arrows point from the labels to their respective parts: from 'FERROMAGNETIC YOKE' to the top yoke, from 'OBJECTIVE LENS HOLDER' to the green box, from 'OBJECTIVE LENS' to the blue circle, and from 'INNER YOKES' to the two vertical inner components.</p>

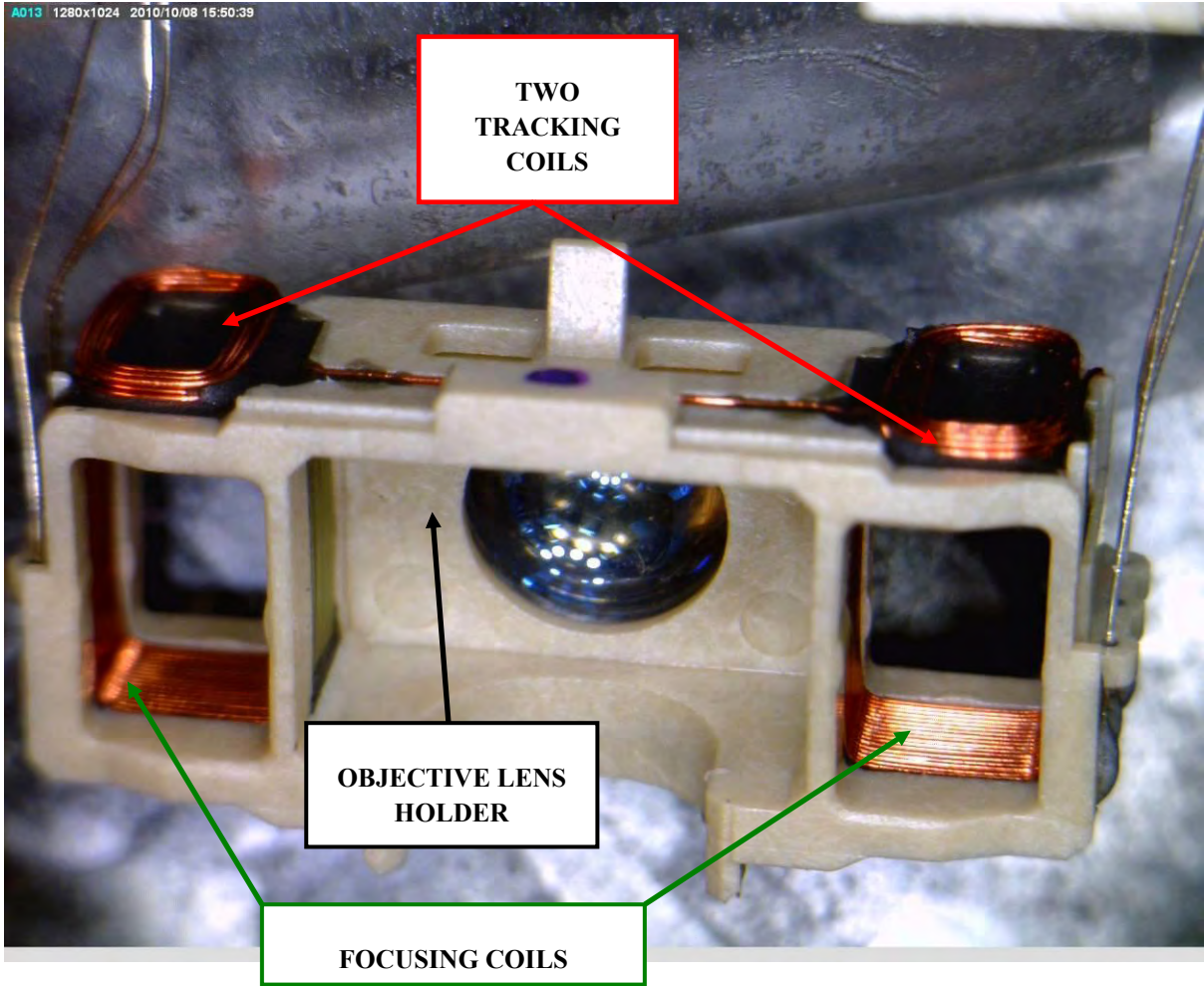
U.S. Patent No. 7,542,384

Exhibit B1

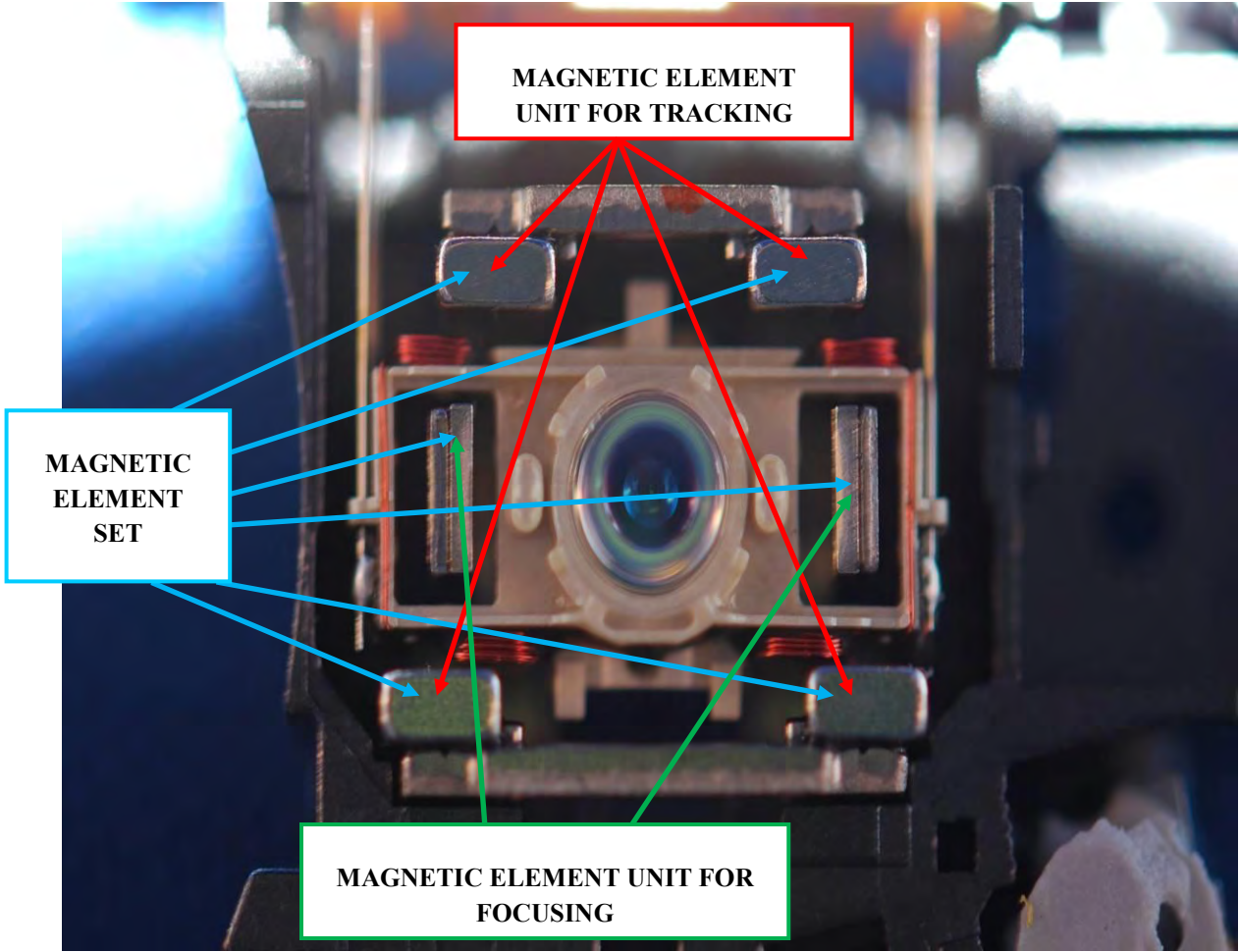
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12c. <u>two tracking coils</u> and <u>two focusing coils</u> which are <u>respectively located on two opposite sides of the objective lens holder</u>	

U.S. Patent No. 7,542,384

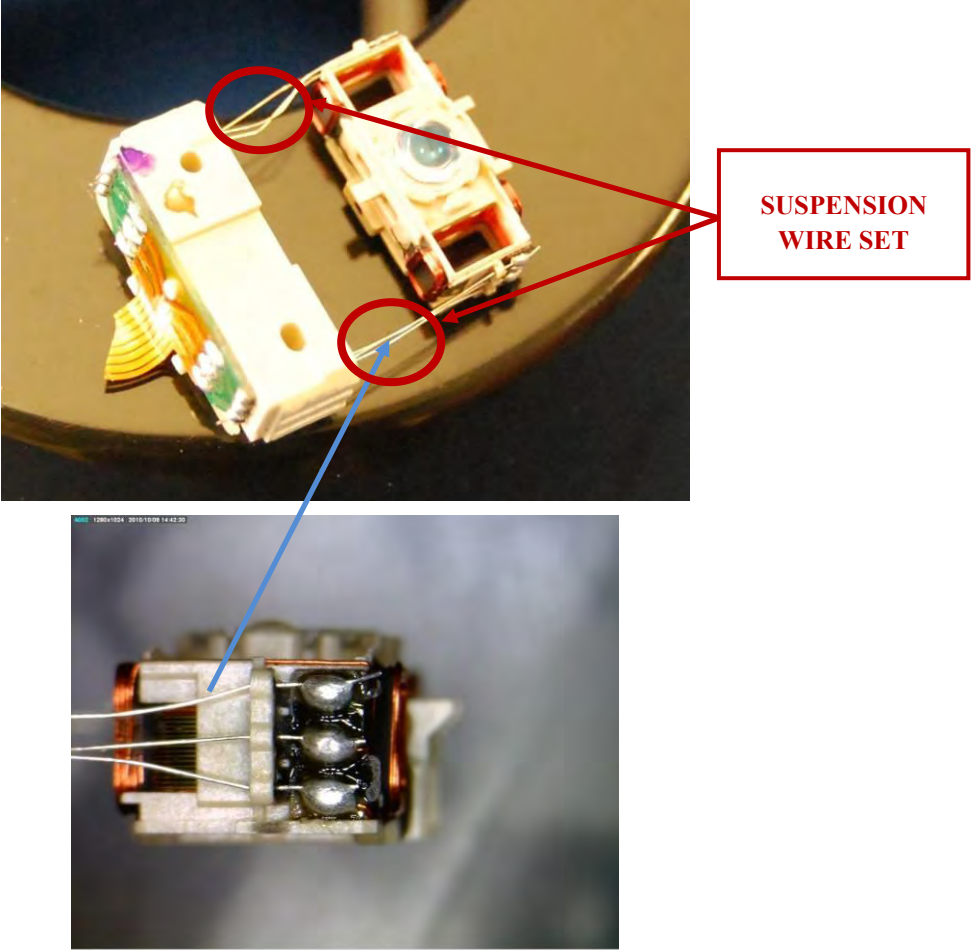
Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
<p>12d. and located on the other two opposite sides of the objective lens holder and surrounded with the two inner yokes;</p>	

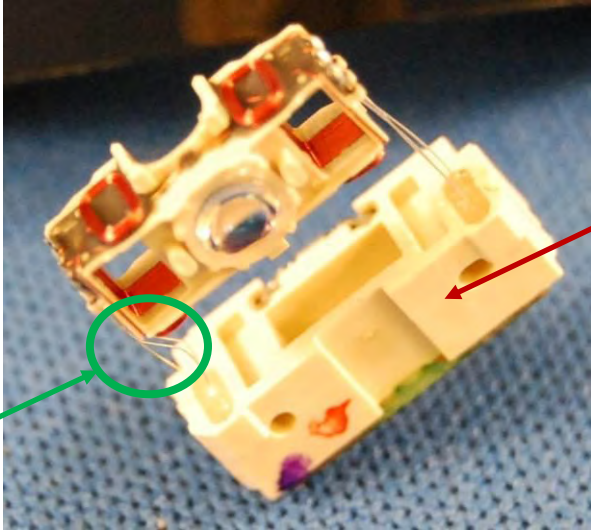
U.S. Patent No. 7,542,384**Exhibit B1**

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
<p>12e. a <u>magnetic element set</u> located on the ferromagnetic yoke corresponding to the tracking coils and the focusing coils to generate a magnetic field perpendicular to the optical axis of the objective lens;</p>	

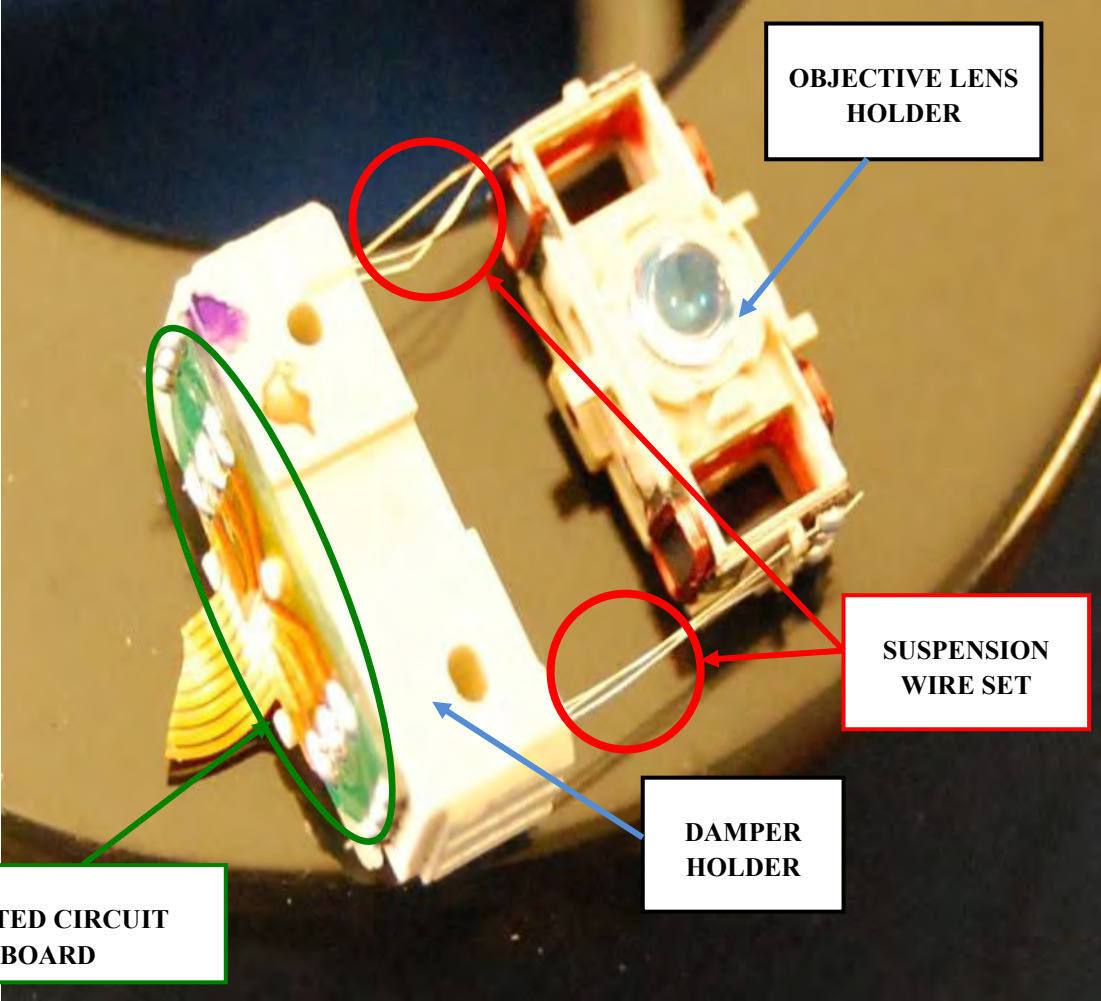
U.S. Patent No. 7,542,384**Exhibit B1**

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
<p>12f. <u>a suspension wire set</u> connecting to the objective lens holder, the tracking coils, and the focusing coils to hang the objective lens holder and channel current to the tracking coils and the focusing coils;</p>	 <p>The evidence consists of two photographs. The top photograph shows a yellow electronic component with two red circles highlighting the suspension wire set. A red box labeled "SUSPENSION WIRE SET" has red arrows pointing to these circles. The bottom photograph is a close-up of the wire set connecting to a component, with a blue arrow pointing from the top photo to this detail.</p>

U.S. Patent No. 7,542,384**Exhibit B1**

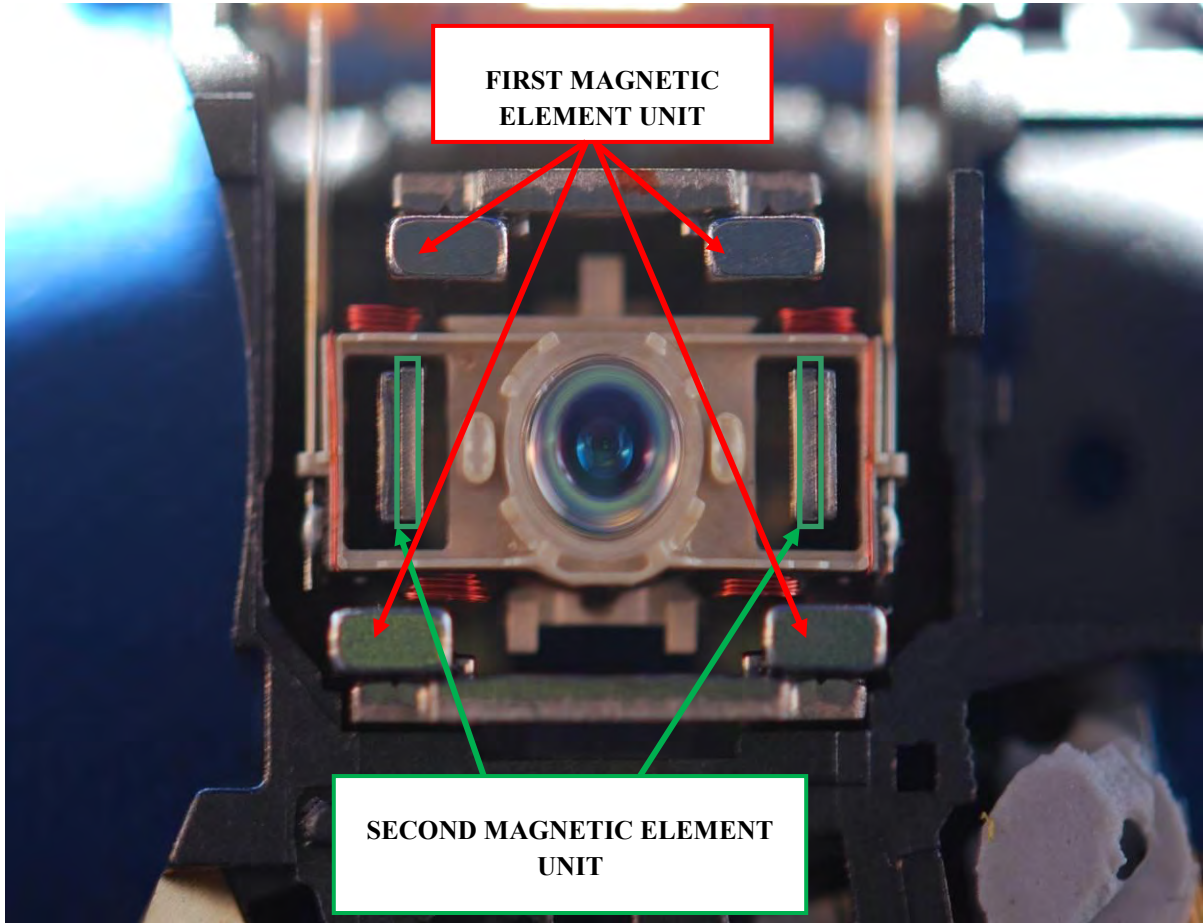
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
<p>12g. <u>a damper holder located on the ferromagnetic yoke to allow the suspension wire set to pass through</u>; and</p>	 <p data-bbox="598 743 850 873">SUSPENSION WIRE SET</p> <p data-bbox="1560 462 1736 592">DAMPER HOLDER</p>

U.S. Patent No. 7,542,384**Exhibit B1**

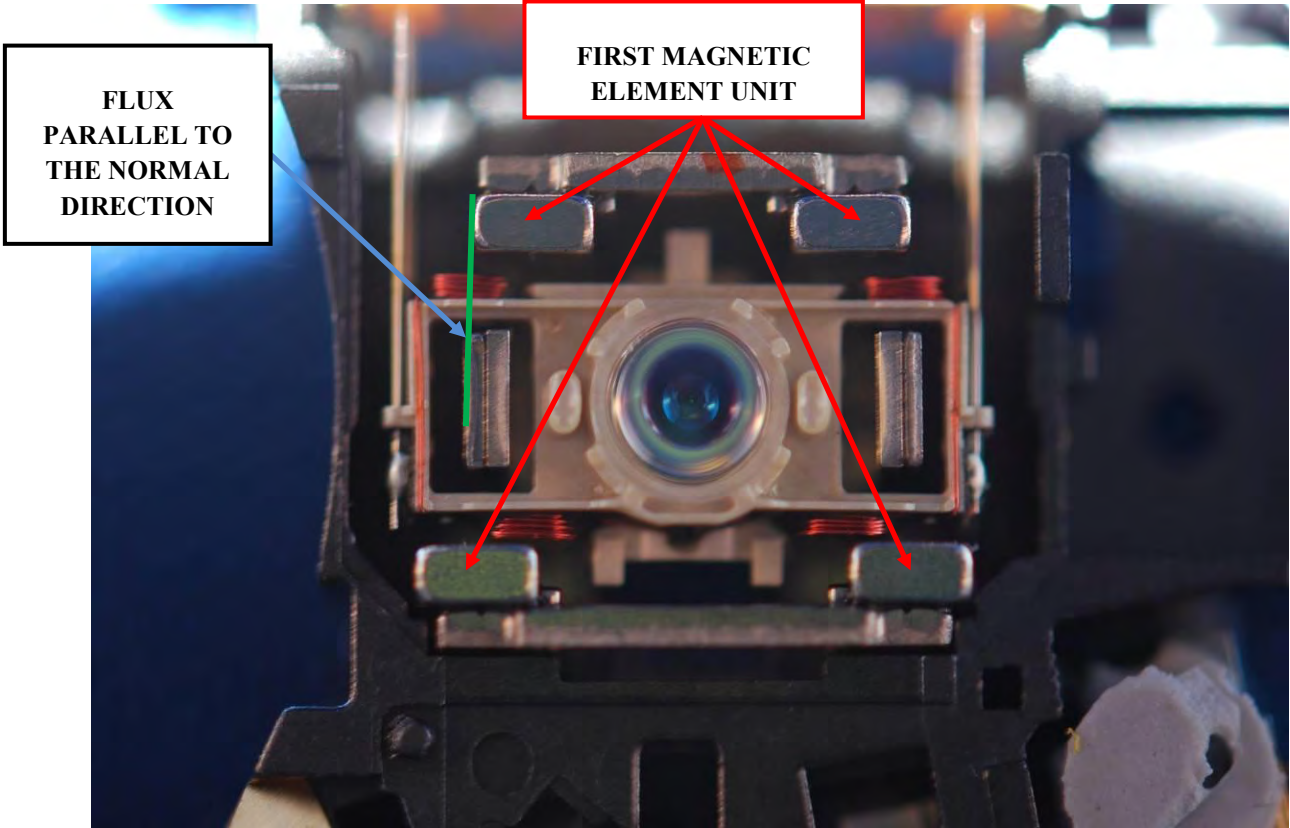
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
<p>12h. <u>a printed circuit board</u> located on the damper holder and surrounded with the <u>suspension wire set</u> to provide the current to the tracking coils and the focusing coils to drive the objective lens holder,</p>	 <p>The photograph shows a mechanical assembly with four labeled components: OBJECTIVE LENS HOLDER (top right), SUSPENSION WIRE SET (bottom right), DAMPER HOLDER (bottom center), and PRINTED CIRCUIT BOARD (bottom left). The printed circuit board is highlighted with a green oval, and the suspension wire set is highlighted with a red oval. The assembly is mounted on a dark surface.</p>

U.S. Patent No. 7,542,384

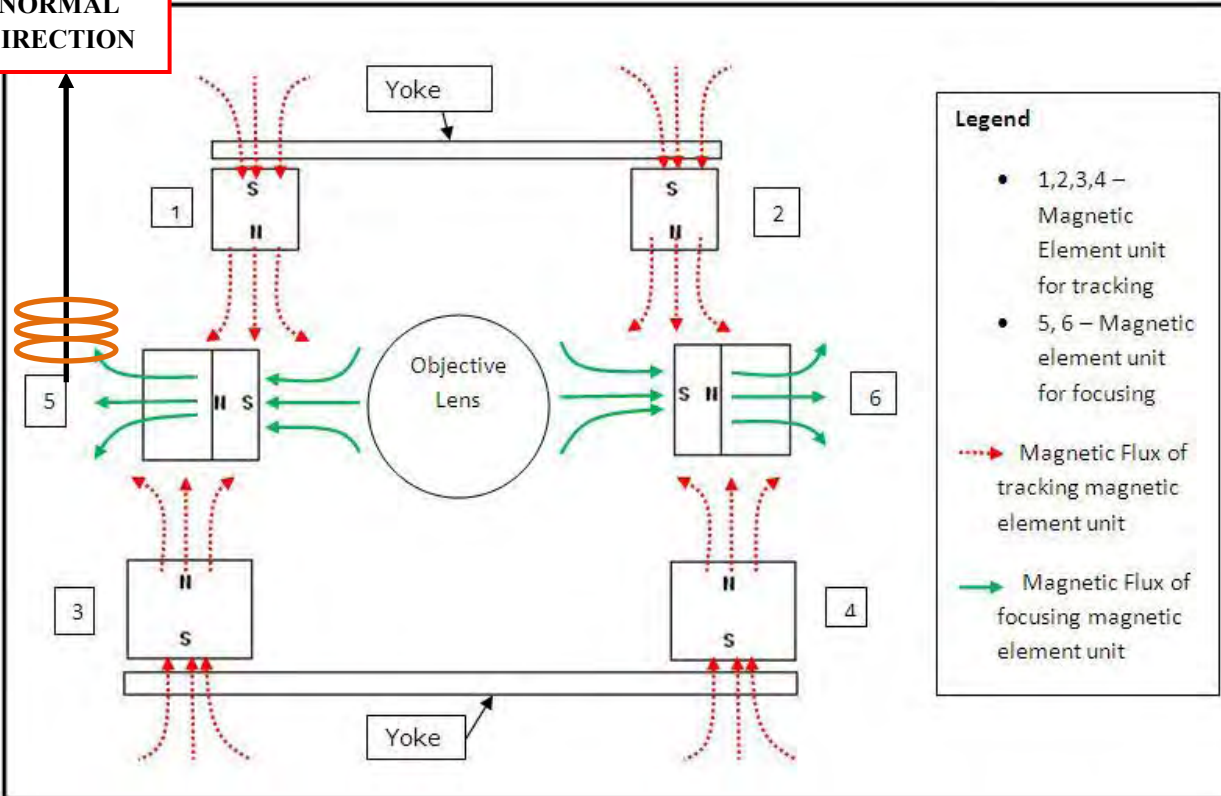
Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
<p>12i. wherein the magnetic element set includes a <u>first magnetic element unit</u> and a <u>second magnetic element unit</u>,</p>	 <p>The photograph shows a mechanical assembly with a central lens. Four rectangular magnetic elements are visible, arranged in a square pattern around the lens. Red arrows point from a red-bordered box labeled 'FIRST MAGNETIC ELEMENT UNIT' to the top two magnets. Green arrows point from a green-bordered box labeled 'SECOND MAGNETIC ELEMENT UNIT' to the bottom two magnets.</p>

U.S. Patent No. 7,542,384**Exhibit B1**

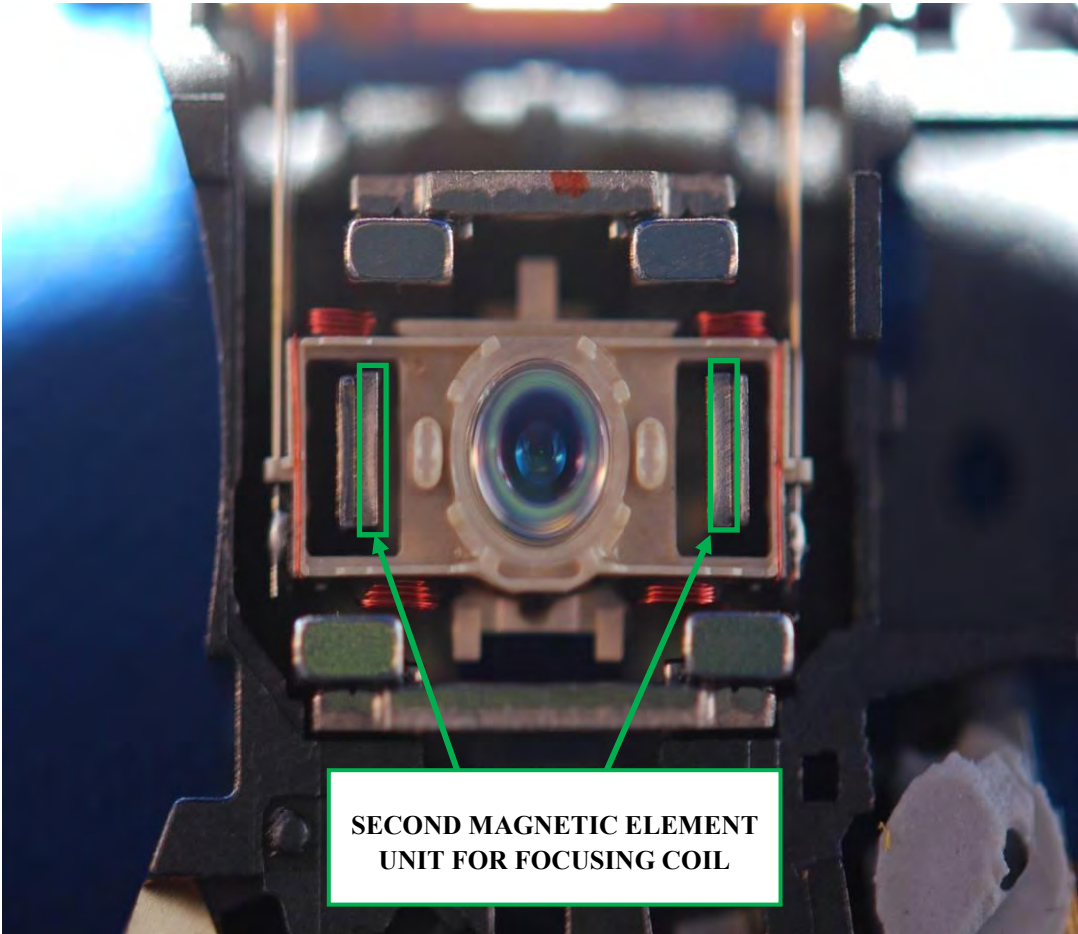
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12j. the first magnetic element unit having a magnetic flux direction parallel with a normal direction of the an area which the tracking coils surround,	 <p data-bbox="569 378 831 574">FLUX PARALLEL TO THE NORMAL DIRECTION</p> <p data-bbox="1083 332 1419 451">FIRST MAGNETIC ELEMENT UNIT</p>

U.S. Patent No. 7,542,384**Exhibit B1**

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
<div data-bbox="390 651 592 773" style="border: 1px solid red; padding: 5px; width: fit-content; margin: 10px auto;">TRACKING COILS</div>	<div data-bbox="569 337 1864 1187" style="border: 1px solid black; padding: 10px;"> <div data-bbox="569 337 793 464" style="border: 1px solid red; padding: 5px; width: fit-content; margin-bottom: 10px;">NORMAL DIRECTION</div>  <div data-bbox="1556 483 1837 1084" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> Legend <ul style="list-style-type: none"> • 1,2,3,4 – Magnetic Element unit for tracking • 5, 6 – Magnetic element unit for focusing • ⋯→ Magnetic Flux of tracking magnetic element unit • → Magnetic Flux of focusing magnetic element unit </div> </div> <p data-bbox="558 1214 1871 1287"><i>Magnetic flux diagram of the magnetic set (top view layout). The red flux lines (dotted) corresponding to the first magnetic element unit are parallel to the normal direction of the area which the tracking coils surround.</i></p>

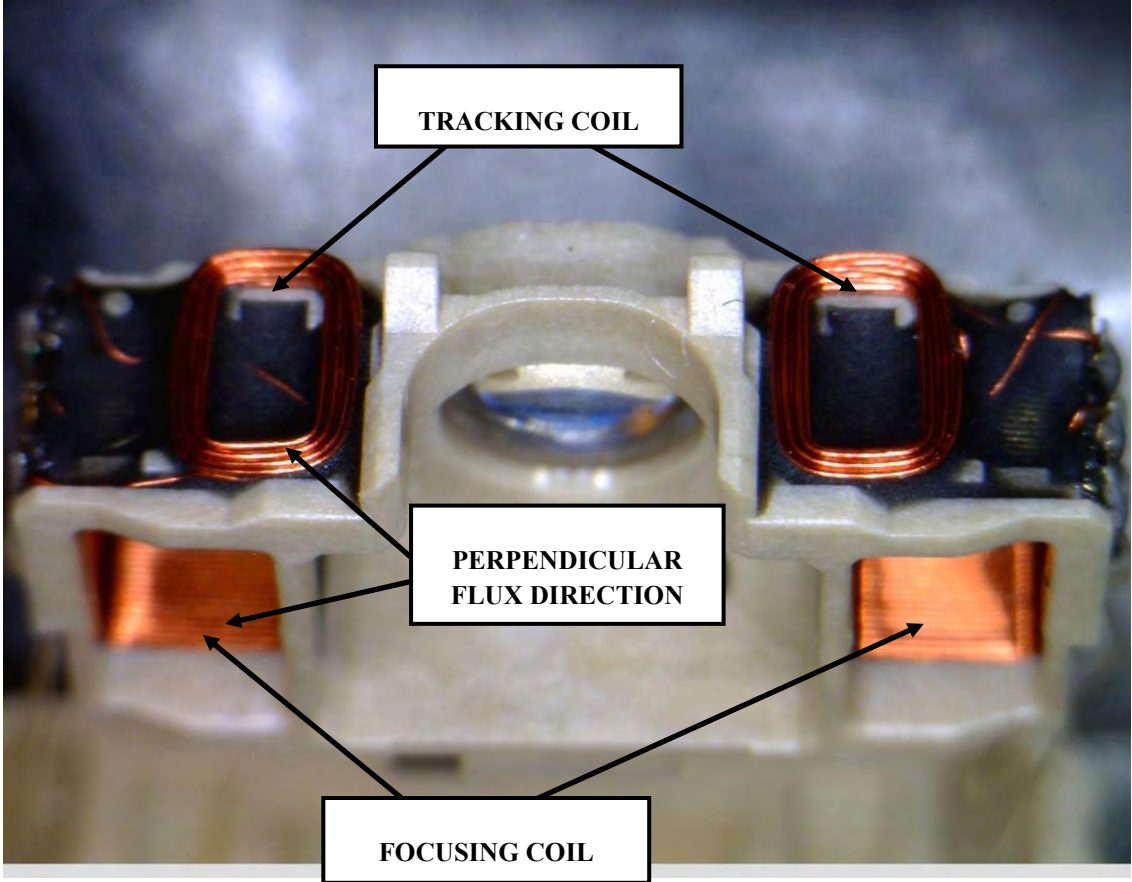
U.S. Patent No. 7,542,384

Exhibit B1

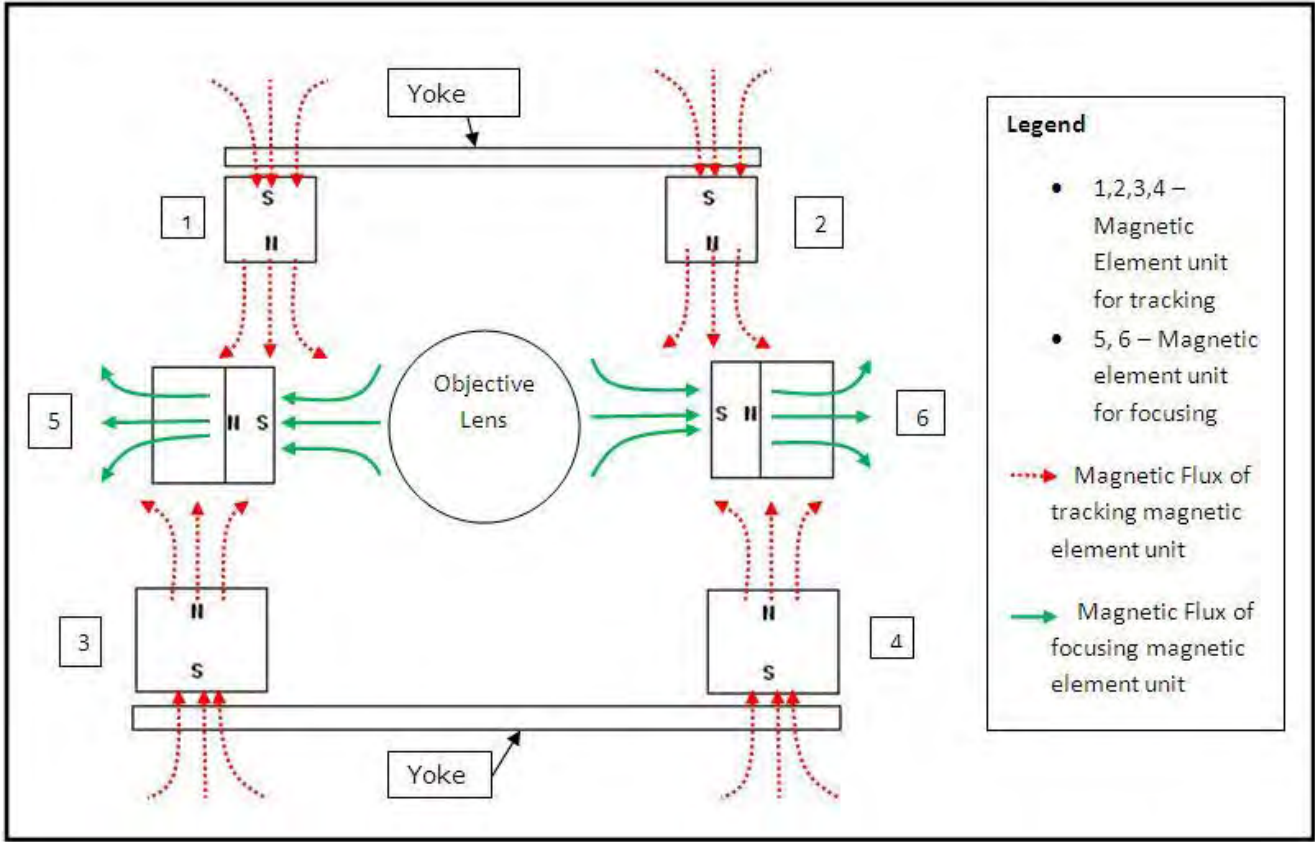
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12k. the second magnetic element unit corresponding to the focusing coils and having a magnetic flux direction perpendicular to the first magnetic element unit, and	 <p data-bbox="1003 1101 1453 1230">SECOND MAGNETIC ELEMENT UNIT FOR FOCUSING COIL</p>

U.S. Patent No. 7,542,384

Exhibit B1

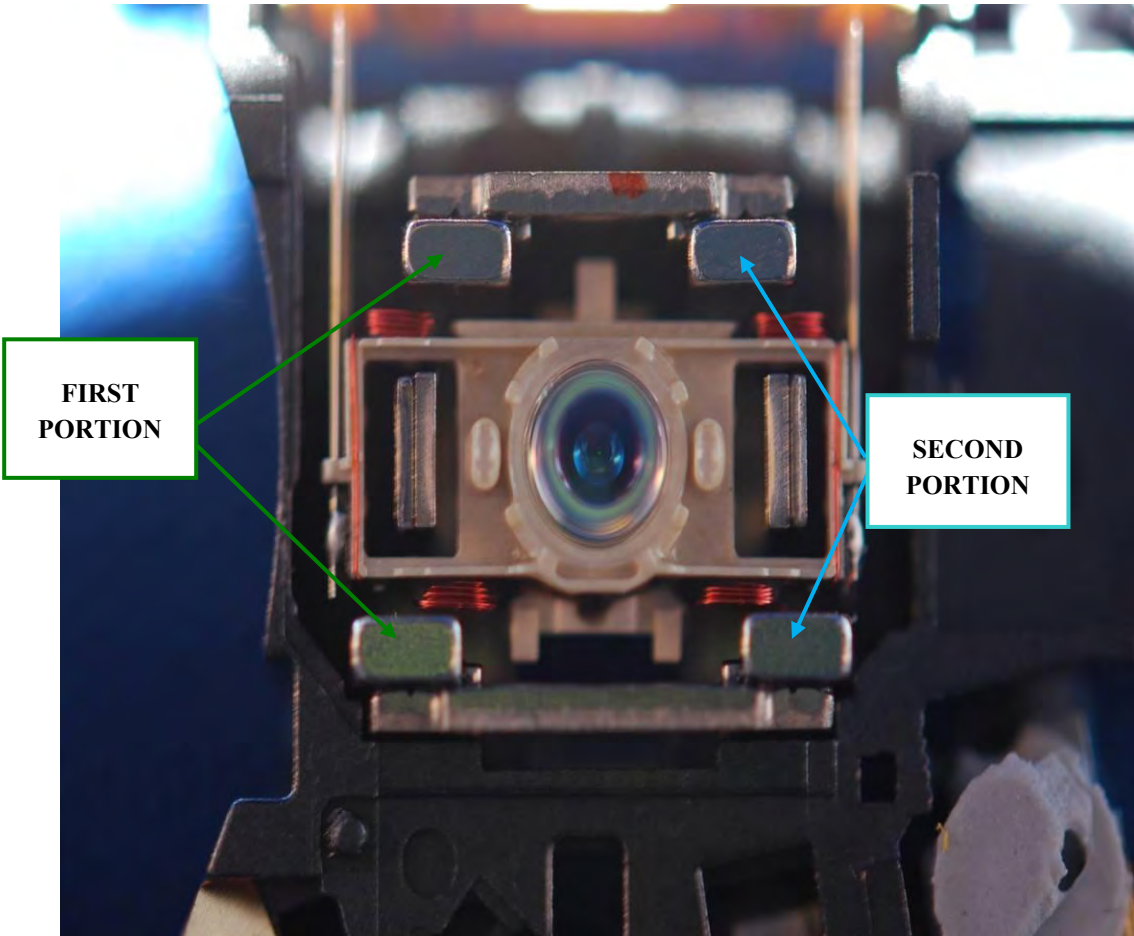
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
	 <p>TRACKING COIL</p> <p>PERPENDICULAR FLUX DIRECTION</p> <p>FOCUSING COIL</p>

U.S. Patent No. 7,542,384**Exhibit B1**

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
	 <p><i>Magnetic flux diagram of the magnetic set (top view layout). The red (dotted) and green (solid) flux lines are perpendicular. Hence, the second magnetic element unit corresponding to the focusing coils has a magnetic flux perpendicular to the first magnetic element unit.</i></p>

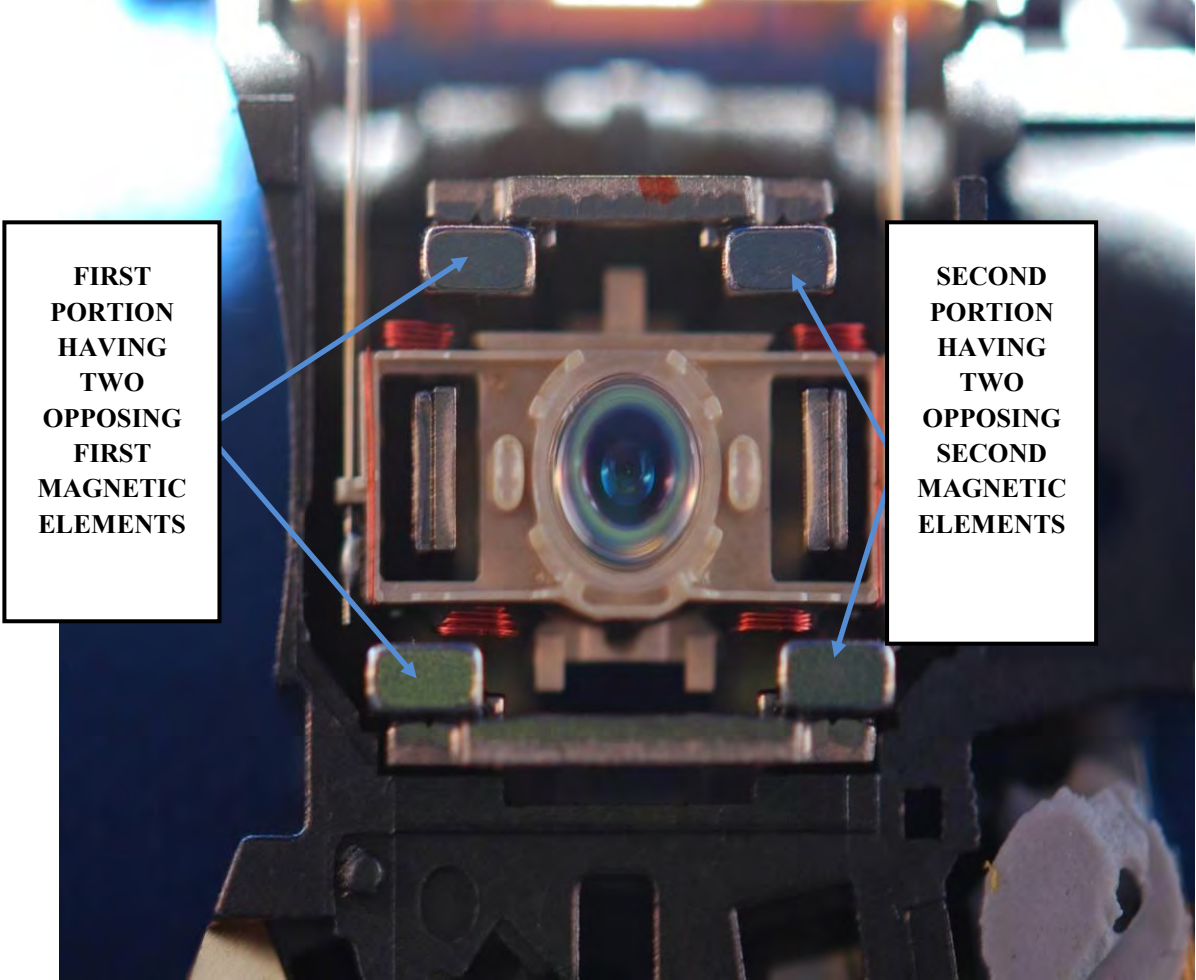
U.S. Patent No. 7,542,384

Exhibit B1

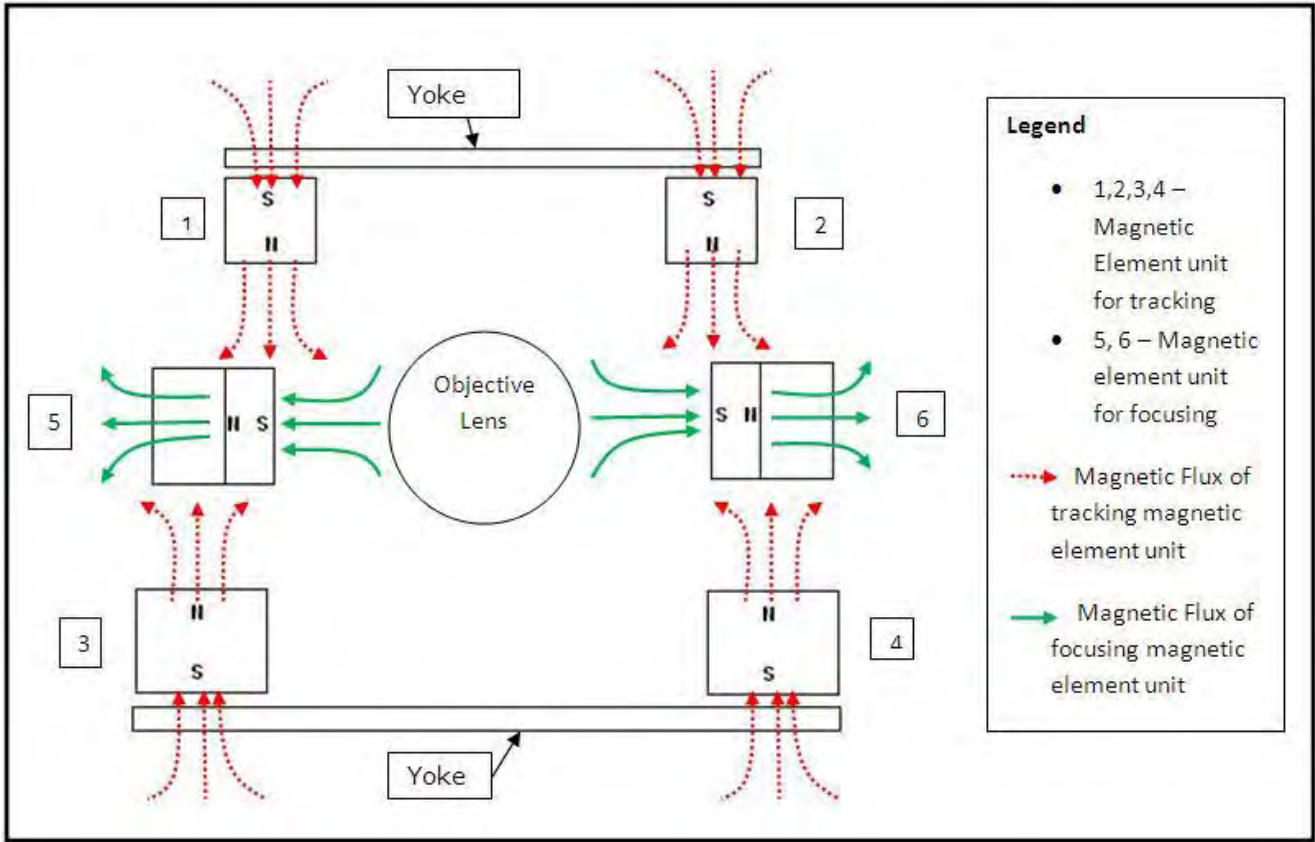
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
<p>12i. wherein the first magnetic element unit includes <u>a first portion</u> and <u>a second portion</u>.</p>	 <p>The photograph shows a central lens assembly with four small rectangular components positioned around it. A green box labeled 'FIRST PORTION' has two green arrows pointing to the left and bottom rectangular components. A blue box labeled 'SECOND PORTION' has two blue arrows pointing to the top and right rectangular components.</p>

U.S. Patent No. 7,542,384

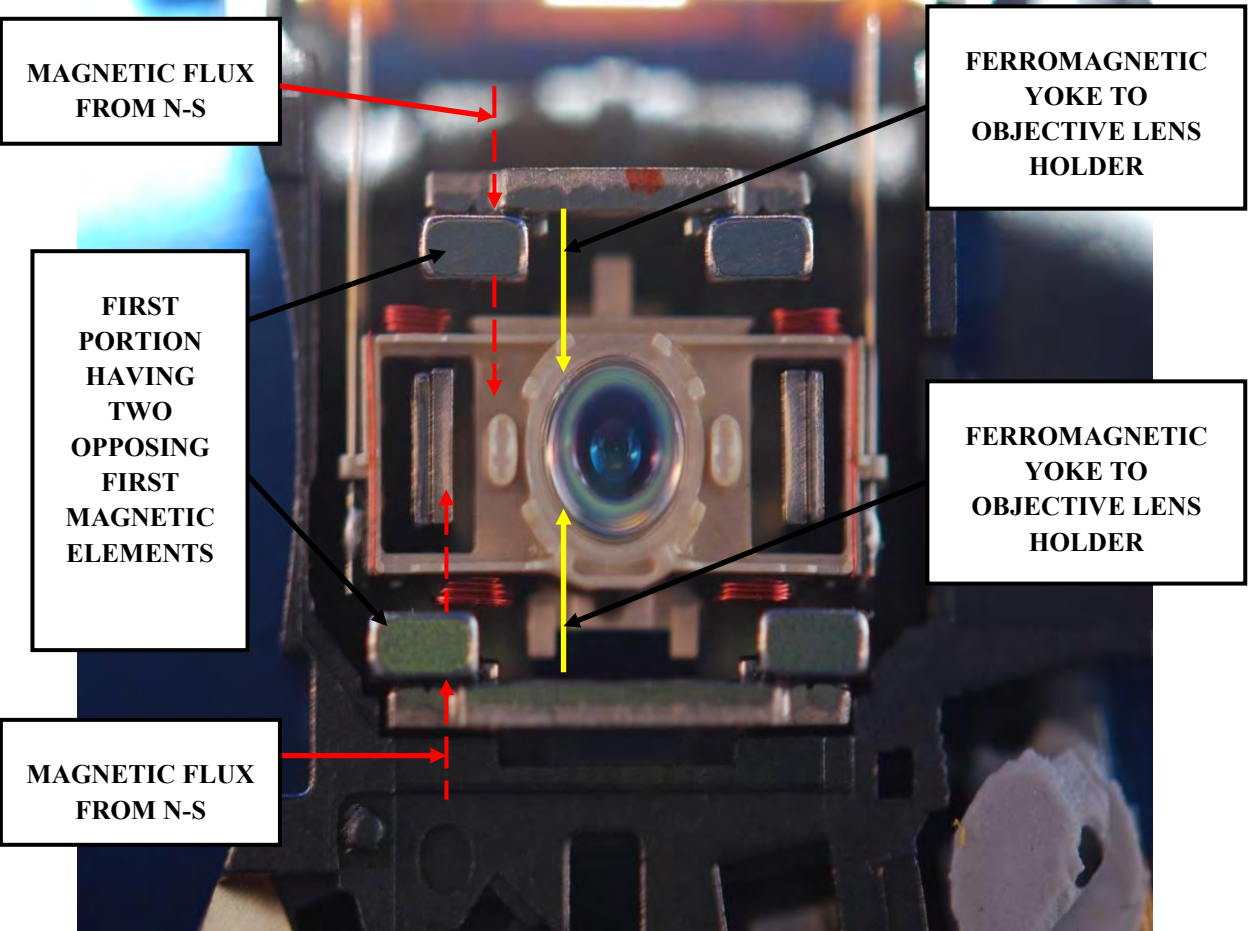
Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
<p>12m. the first portion having two opposing first magnetic elements, the second portion having two opposing second magnetic elements,</p>	

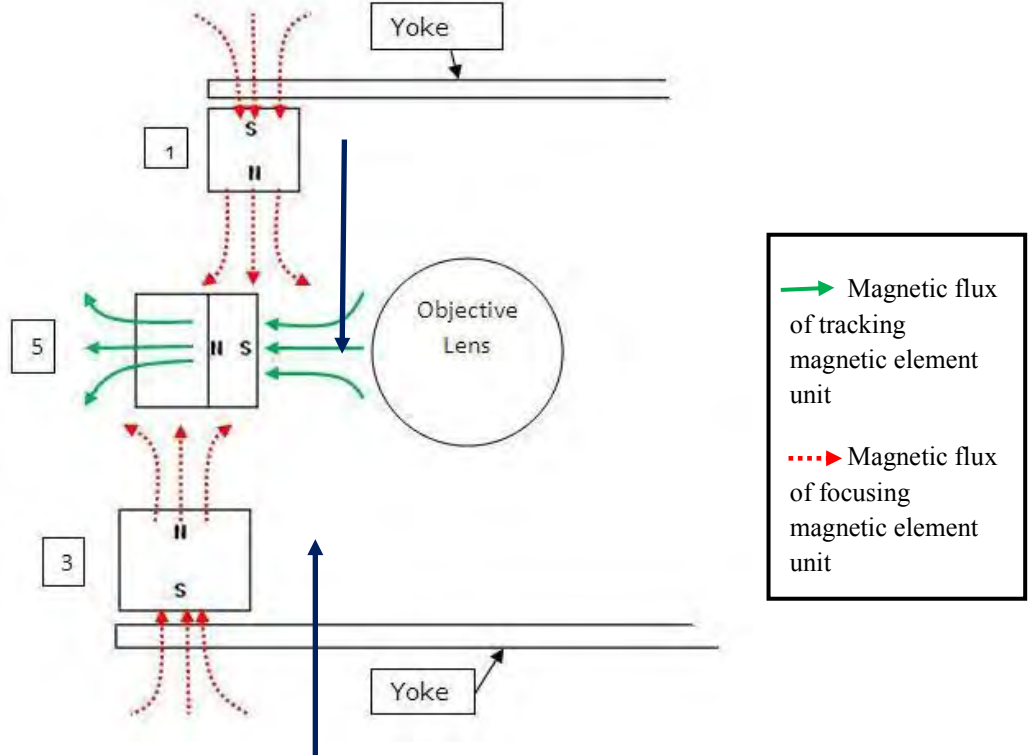
U.S. Patent No. 7,542,384**Exhibit B1**

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
	 <p><i>1,3 correspond to the first portion having two opposing first magnetic elements.</i></p> <p><i>2,4 correspond to the second portion having two opposing second magnetic elements.</i></p>

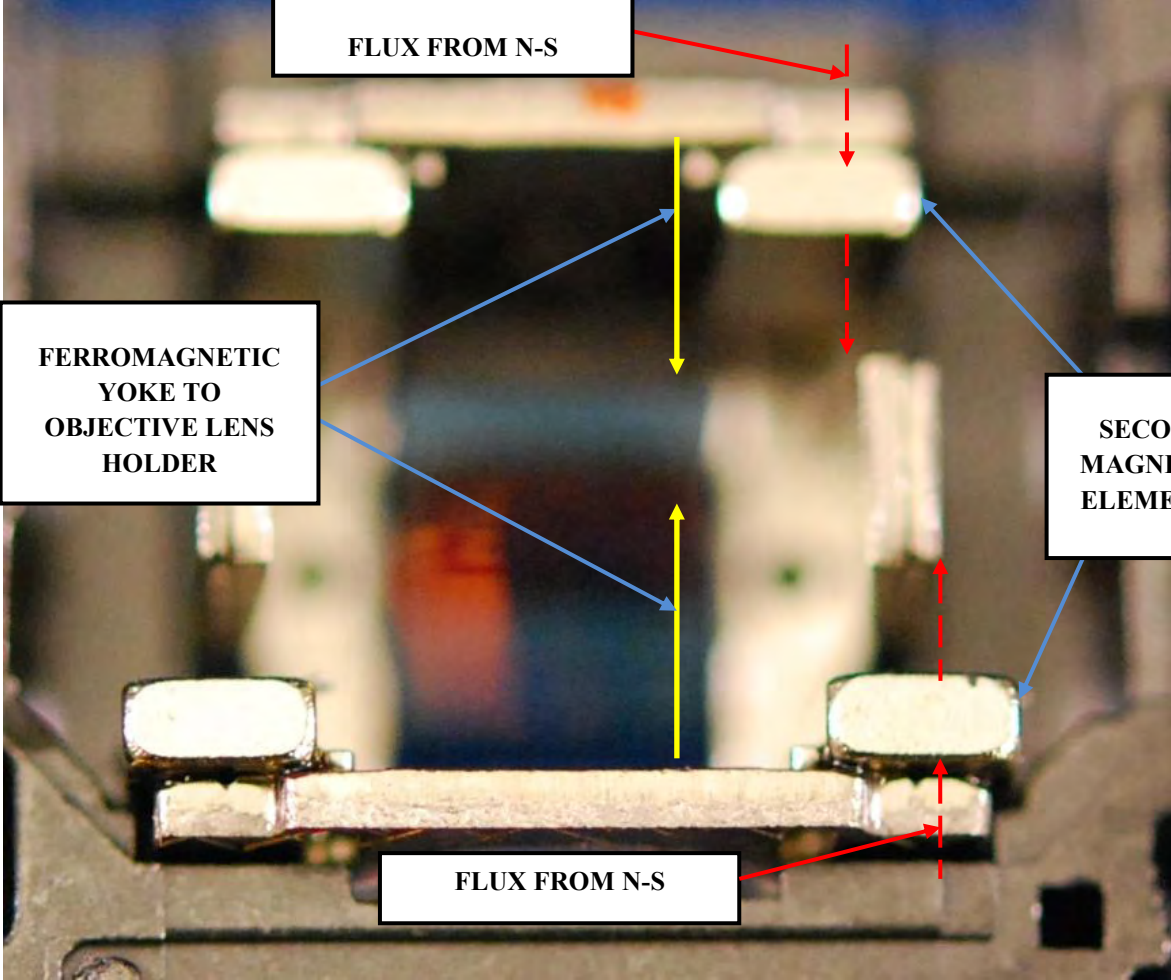
U.S. Patent No. 7,542,384**Exhibit B1**

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
<p>12n. the magnetic flux direction of the first magnetic elements from the N pole to the S pole being coincided with the direction from the ferromagnetic yoke to the objective lens holder,</p>	 <p>MAGNETIC FLUX FROM N-S</p> <p>FIRST PORTION HAVING TWO OPPOSING FIRST MAGNETIC ELEMENTS</p> <p>MAGNETIC FLUX FROM N-S</p> <p>FERROMAGNETIC YOKE TO OBJECTIVE LENS HOLDER</p> <p>FERROMAGNETIC YOKE TO OBJECTIVE LENS HOLDER</p>

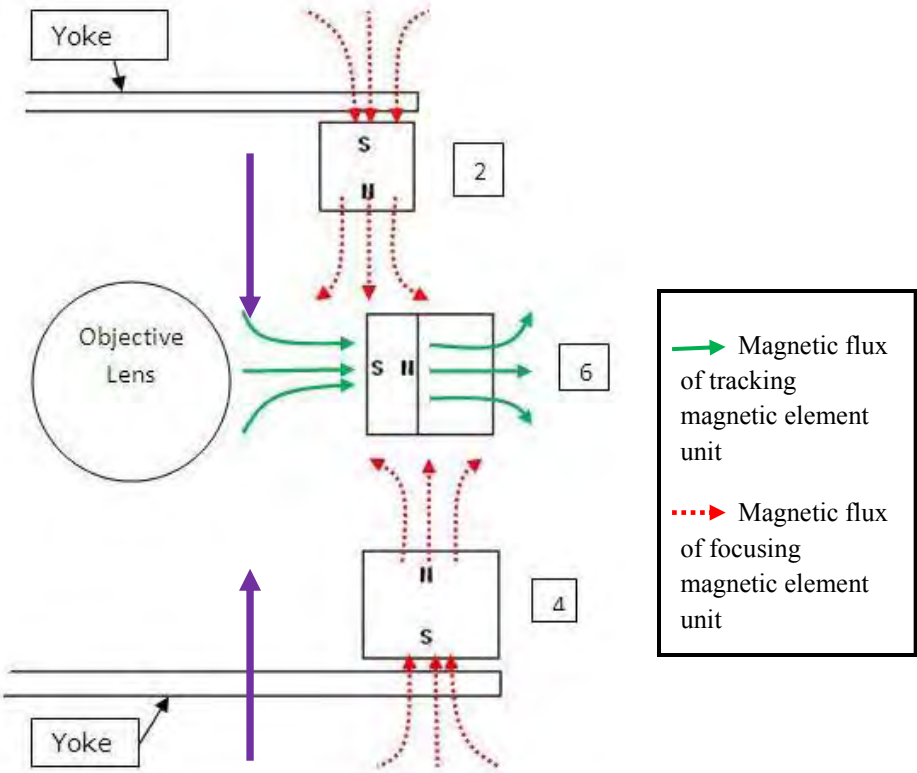
U.S. Patent No. 7,542,384**Exhibit B1**

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
	 <p>The diagram illustrates a magnetic tracking system. It features a central 'Objective Lens' (a circle) flanked by two magnetic elements, labeled 1 and 3. Element 1 is at the top, and element 3 is at the bottom. Both elements are rectangular and divided into two sections, labeled 'S' and 'II'. Above element 1 and below element 3 are horizontal lines representing the 'Yoke'. Red dotted lines with arrowheads indicate the magnetic flux of the focusing magnetic element unit, showing paths from the yoke through the 'S' sections of elements 1 and 3. Green solid lines with arrowheads indicate the magnetic flux of the tracking magnetic element unit, showing paths from the 'II' sections of elements 1 and 3 towards the objective lens. Blue bold lines with arrowheads indicate the direction from the ferromagnetic yoke to the objective lens holder, showing a central vertical path. A legend on the right side of the diagram defines the line types: a green arrow for 'Magnetic flux of tracking magnetic element unit' and a red dotted arrow for 'Magnetic flux of focusing magnetic element unit'.</p> <p>Blue lines (bold lines) represent direction from the ferromagnetic yoke to the objective lens holder.</p> <p>The red flux lines (dotted) corresponding to the magnetic flux direction of the first magnetic elements is coinciding with the blue lines (bold lines).</p> <p>1, 3 are the first magnetic elements</p>

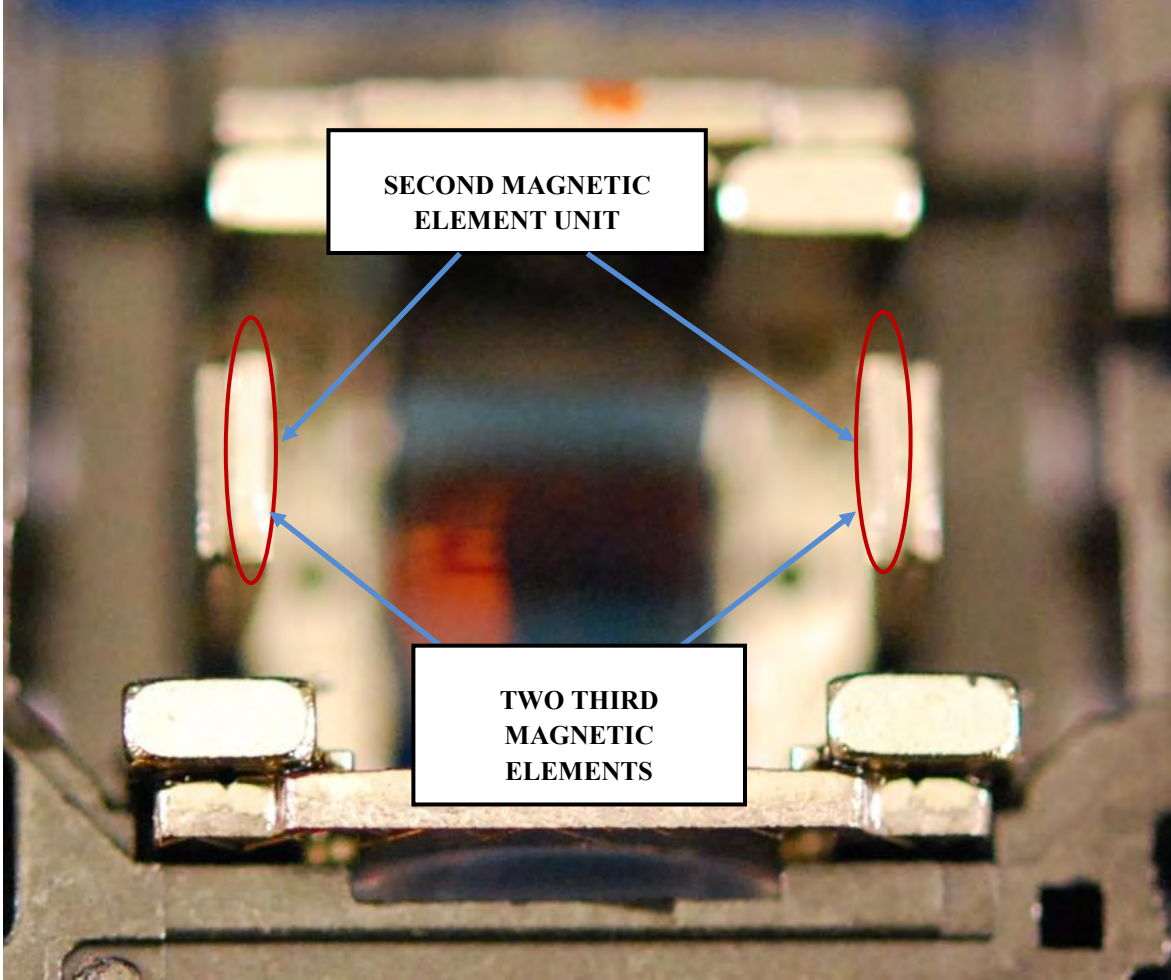
U.S. Patent No. 7,542,384**Exhibit B1**

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12o. the magnetic flux direction of the second magnetic elements from the N pole to the S pole being coincided with the direction from the ferromagnetic yoke to the objective lens holder,	 <p>The photograph shows a cross-section of a microscope objective assembly. A central vertical rod is surrounded by a ferromagnetic yoke. Two sets of second magnetic elements are positioned on either side of the yoke. Red dashed arrows indicate the magnetic flux direction from the N pole to the S pole of the second magnetic elements. Yellow solid arrows indicate the magnetic flux direction from the ferromagnetic yoke to the objective lens holder. Blue solid arrows point to the second magnetic elements and the ferromagnetic yoke.</p> <p>FLUX FROM N-S</p> <p>FERROMAGNETIC YOKE TO OBJECTIVE LENS HOLDER</p> <p>SECOND MAGNETIC ELEMENTS</p> <p>FLUX FROM N-S</p>

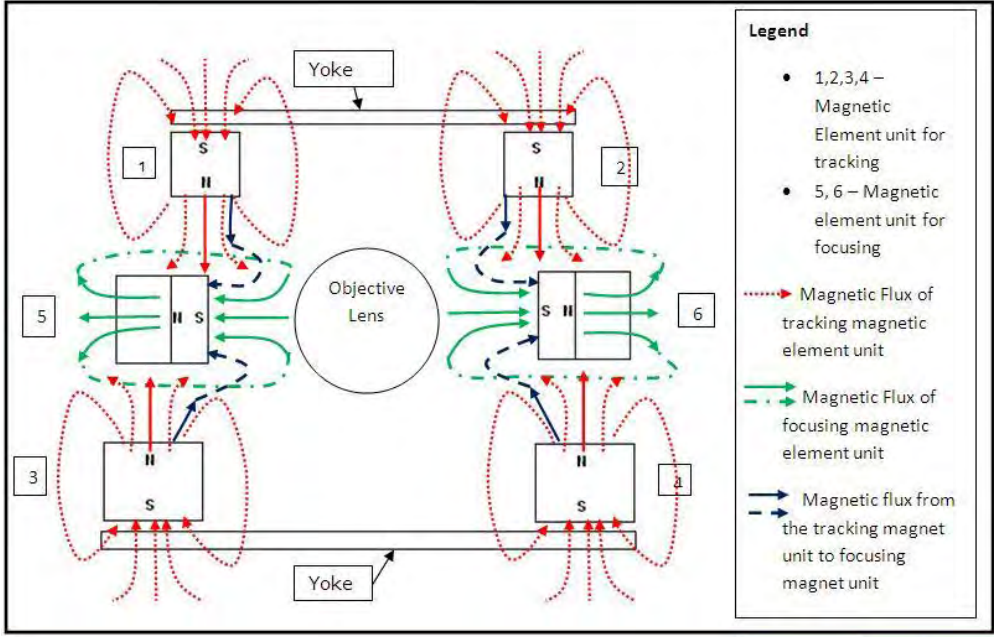
U.S. Patent No. 7,542,384**Exhibit B1**

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
	 <p><i>Purple lines (bold lines) represent direction from the ferromagnetic yoke to the objective lens holder. The red flux lines (dotted lines) corresponding to the magnetic flux direction of the second magnetic elements is coinciding with the purple lines. 2, 4 are the second magnetic elements</i></p>

U.S. Patent No. 7,542,384**Exhibit B1**

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12p. the second magnetic element unit including two third magnetic elements that have a magnetic flux direction from the ferromagnetic yoke to the objective lens holder,	 <p>The photograph shows a close-up of a microscope's internal magnetic assembly. A central label 'SECOND MAGNETIC ELEMENT UNIT' has two blue arrows pointing to two red-outlined oval components. Below these, another label 'TWO THIRD MAGNETIC ELEMENTS' has two blue arrows pointing to two rectangular components. The background is blurred, showing other parts of the assembly.</p>

U.S. Patent No. 7,542,384**Exhibit B1**

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
	 <p>Legend</p> <ul style="list-style-type: none"> • 1,2,3,4 – Magnetic Element unit for tracking • 5, 6 – Magnetic element unit for focusing Magnetic Flux of tracking magnetic element unit --- Magnetic Flux of focusing magnetic element unit → Magnetic flux from the tracking magnet unit to focusing magnet unit <p><i>Explanation #1:</i> The dark blue lines (dashed lines) and red (solid lines) are flux lines originating from N pole of tracking magnets and ending on S pole of focusing magnets. The direction of these lines is from ferromagnetic yoke to the objective lens.</p> <p><i>Explanation #2:</i> The green lines (dashed and dotted lines) are flux lines of focusing magnets. They form closed loops from the N pole to S pole of these magnets. This direction (N->S pole) is from the ferromagnetic yoke 5 and 6 to the objective lens unit.</p>

U.S. Patent No. 7,542,384**Exhibit B1**

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
<p>18. An <u>objective lens actuator</u>, comprising:³</p>	<p>Each element of this claim, except where noted otherwise, and each element of the asserted claims dependent thereon, is present literally and/or under the doctrine of equivalents in the accused LG Products.⁴</p> <p>ITRI provides these infringement contentions before obtaining discovery and disclosures from LG. ITRI expects that LG and/or third parties will produce information regarding LG's instrumentalities beyond that which is publically available. Accordingly, ITRI reserves the right to modify these infringement contentions based upon LG's document production.</p>


³ ITRI contends that the preamble to this claim is not limiting in any manner. ITRI's references to the accused product regarding the preamble are for illustration only and do not constitute an admission that the preamble is limiting.

⁴ The LG Products often practice the claim elements in numerous alternative ways in accordance with the present chart. The LG Products should be assumed to act alone or in combination as referenced herein and interpreted in the singular or plural accordingly. LG further provides the LG Products as well as the instructions to customers/users causing them to use the accused products in an infringing manner, including, without limitation, in their default and expected uses.

To the extent each element of this claim, and the asserted claims dependent thereon are not present literally in the accused LG Products, each element is present under the doctrine of equivalents because there is no substantial difference between the elements of the asserted claims and the corresponding functionality in the accused instrumentality, *i.e.*, the corresponding functionality in the accused product performs substantially the same function, in substantially the same way to achieve substantially the same results as the claimed elements.

U.S. Patent No. 7,542,384

Exhibit B1

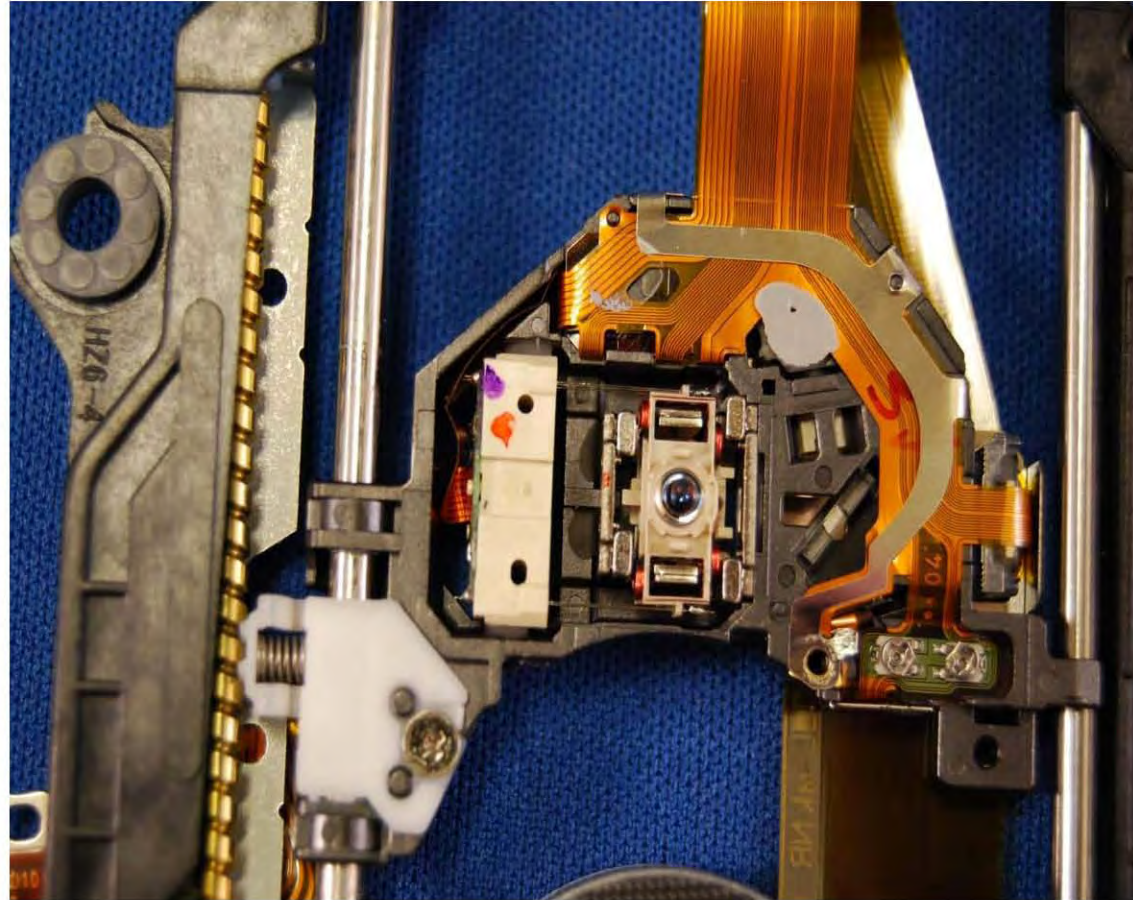
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
	

U.S. Patent No. 7,542,384

Exhibit B1

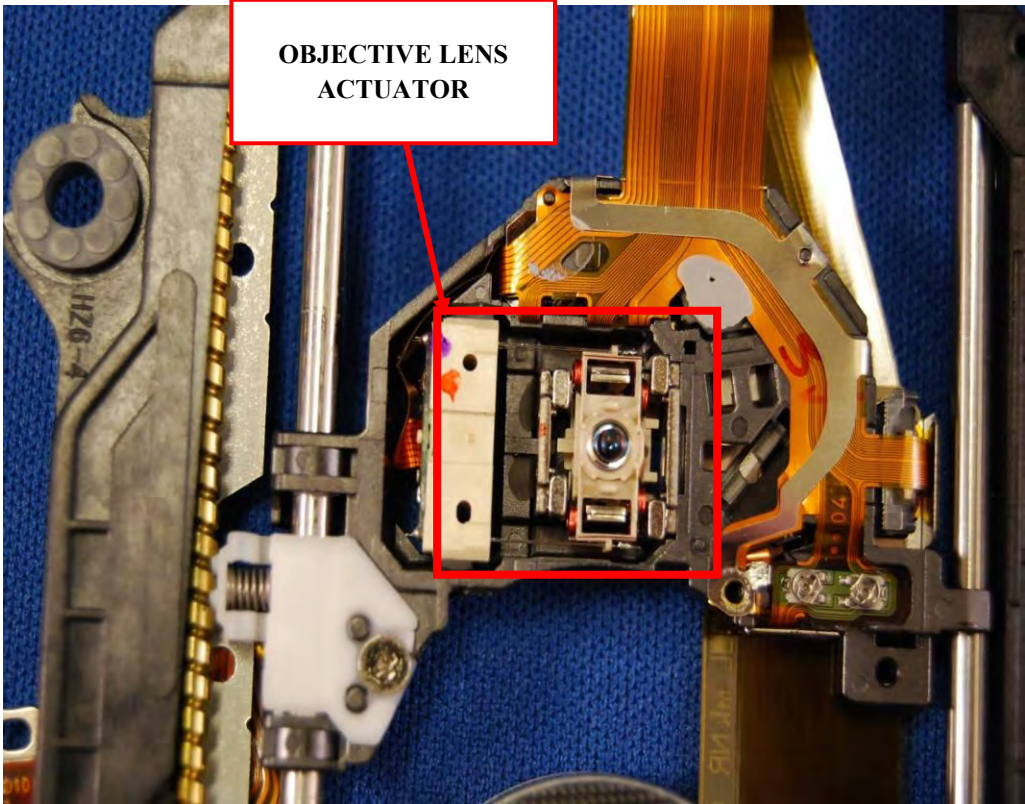
**CLAIM ELEMENT OF
USP 7,542,384**

EVIDENCE FROM PRODUCT (LG GP08LU30)



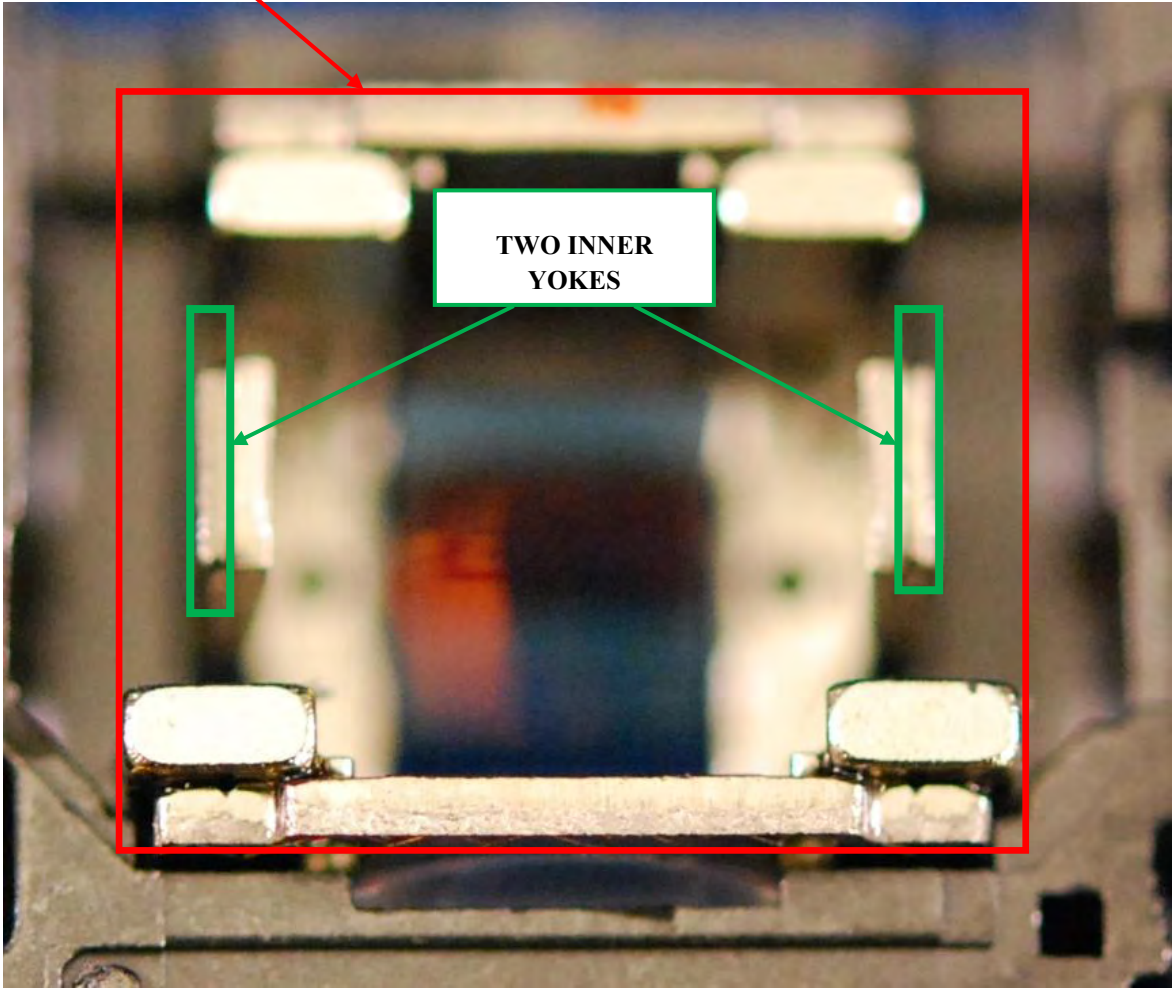
U.S. Patent No. 7,542,384

Exhibit B1

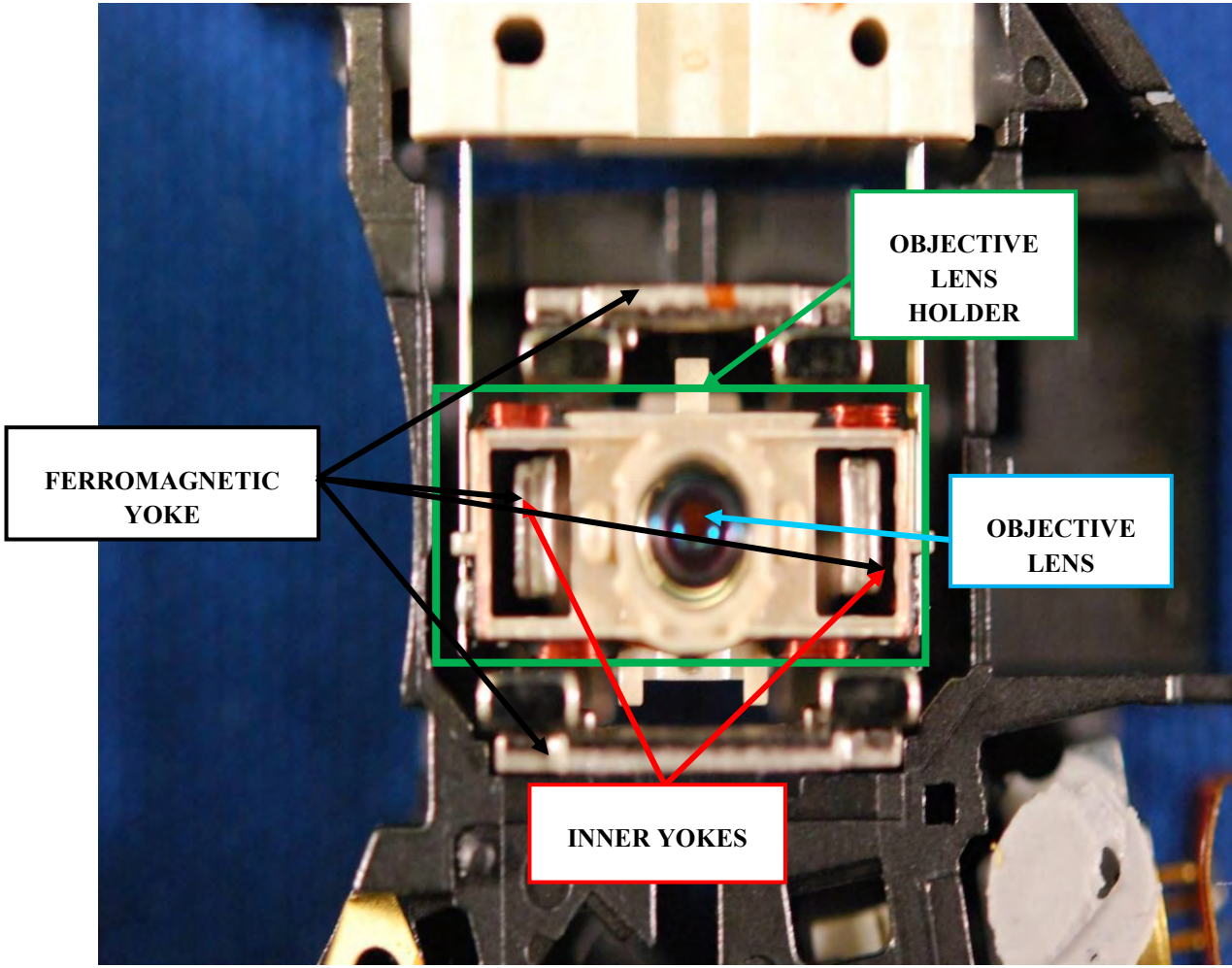
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
	 <p>The photograph shows the internal components of a camera module. A red rectangular box highlights a specific mechanical assembly. A white callout box with a red border and a red leader line points to this assembly. The callout box contains the text "OBJECTIVE LENS ACTUATOR". The assembly itself is a complex of metal and plastic parts, including a small lens element. The surrounding components include a metal frame, a gold-colored flex cable, and various mounting hardware. The entire assembly is set against a blue textured background.</p>

U.S. Patent No. 7,542,384

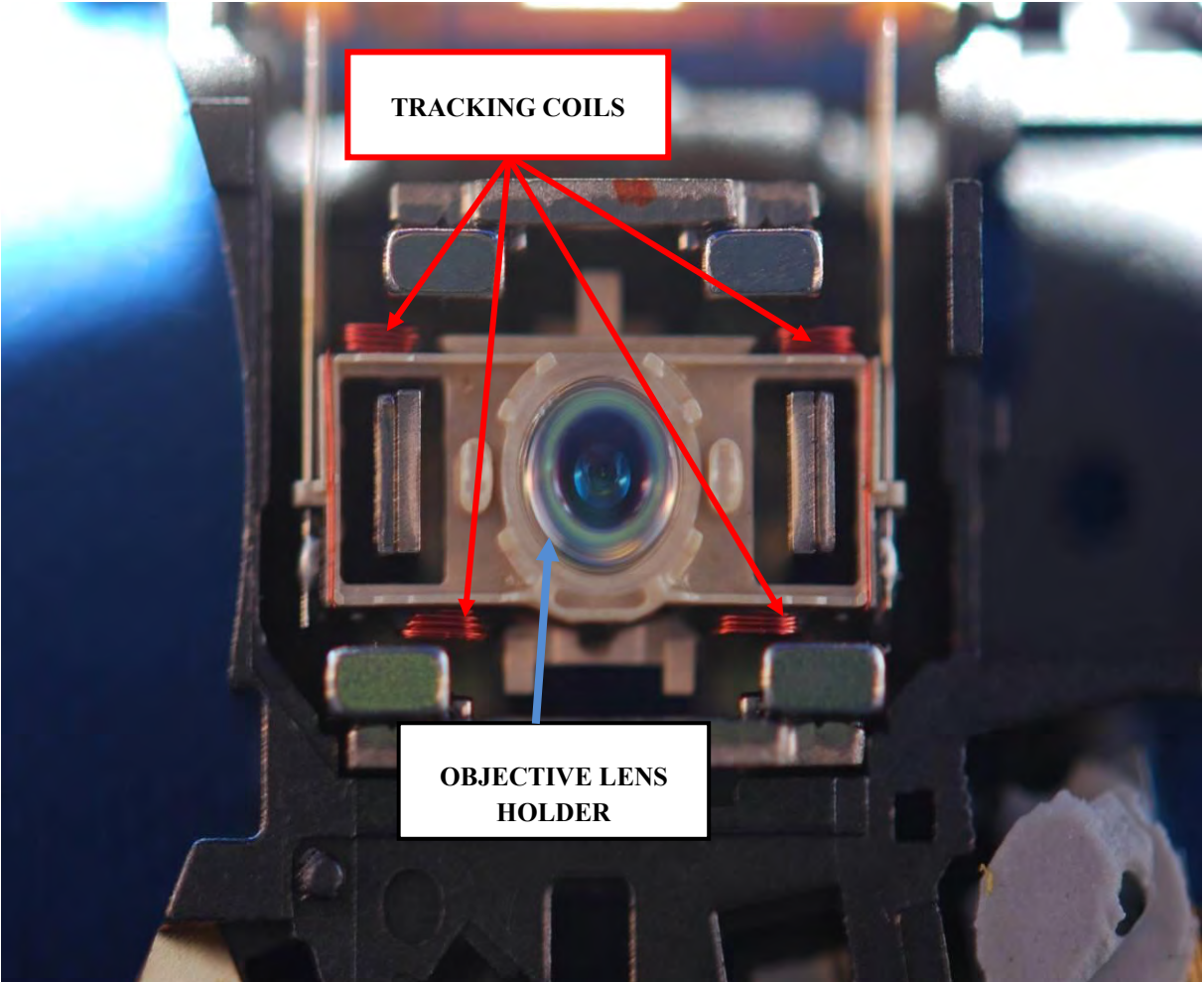
Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
18a. a <u>ferromagnetic yoke</u> including <u>two inner yokes</u> ;	<p data-bbox="632 321 957 345">FERROMAGNETIC YOKE</p>  <p data-bbox="1115 565 1394 678">TWO INNER YOKES</p> <p>The photograph shows a close-up of a mechanical assembly. A red rectangular box highlights a central component, which is a ferromagnetic yoke. Inside this red box, two vertical rectangular components are highlighted with green boxes. Green arrows point from a central text box labeled 'TWO INNER YOKES' to these two green boxes. A red arrow points from the text 'FERROMAGNETIC YOKE' to the top edge of the red box. The background is blurred, showing other parts of the device.</p>

U.S. Patent No. 7,542,384**Exhibit B1**

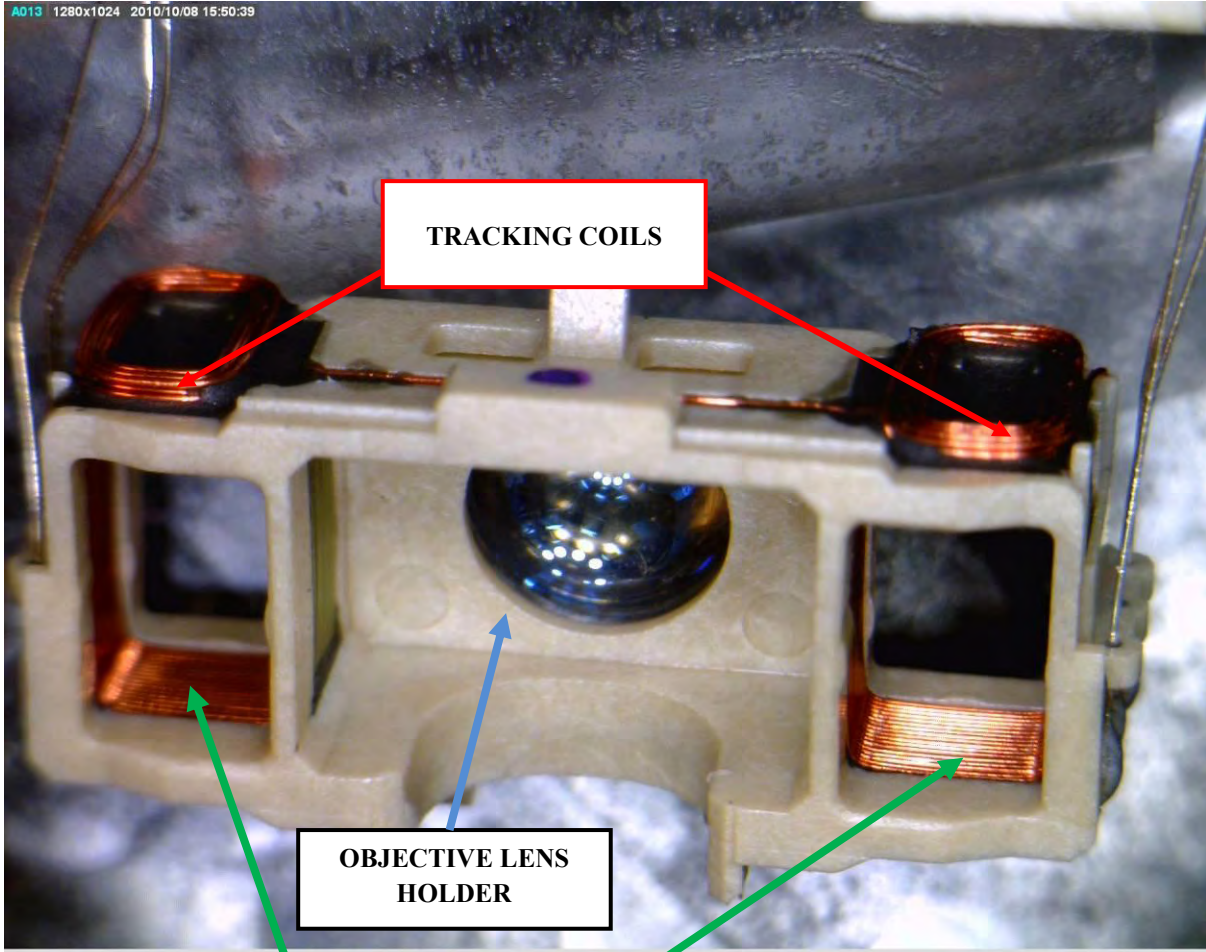
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
<p>18b. an <u>objective lens holder</u> movably located on the ferromagnetic yoke corresponding to the <u>inner yokes</u> for holding an <u>objective lens</u>;</p>	 <p>The photograph shows a close-up of the objective lens assembly. A green rectangular box highlights the objective lens holder, which is a small, light-colored component. It is mounted on a larger, dark-colored ferromagnetic yoke. The yoke has two inner yokes, which are also highlighted by a red box. The objective lens is visible in the center of the assembly. Labels with arrows point to the following components:</p> <ul style="list-style-type: none">OBJECTIVE LENS HOLDER (green box)FERROMAGNETIC YOKE (black box)INNER YOKES (red box)OBJECTIVE LENS (blue box)

U.S. Patent No. 7,542,384**Exhibit B1**

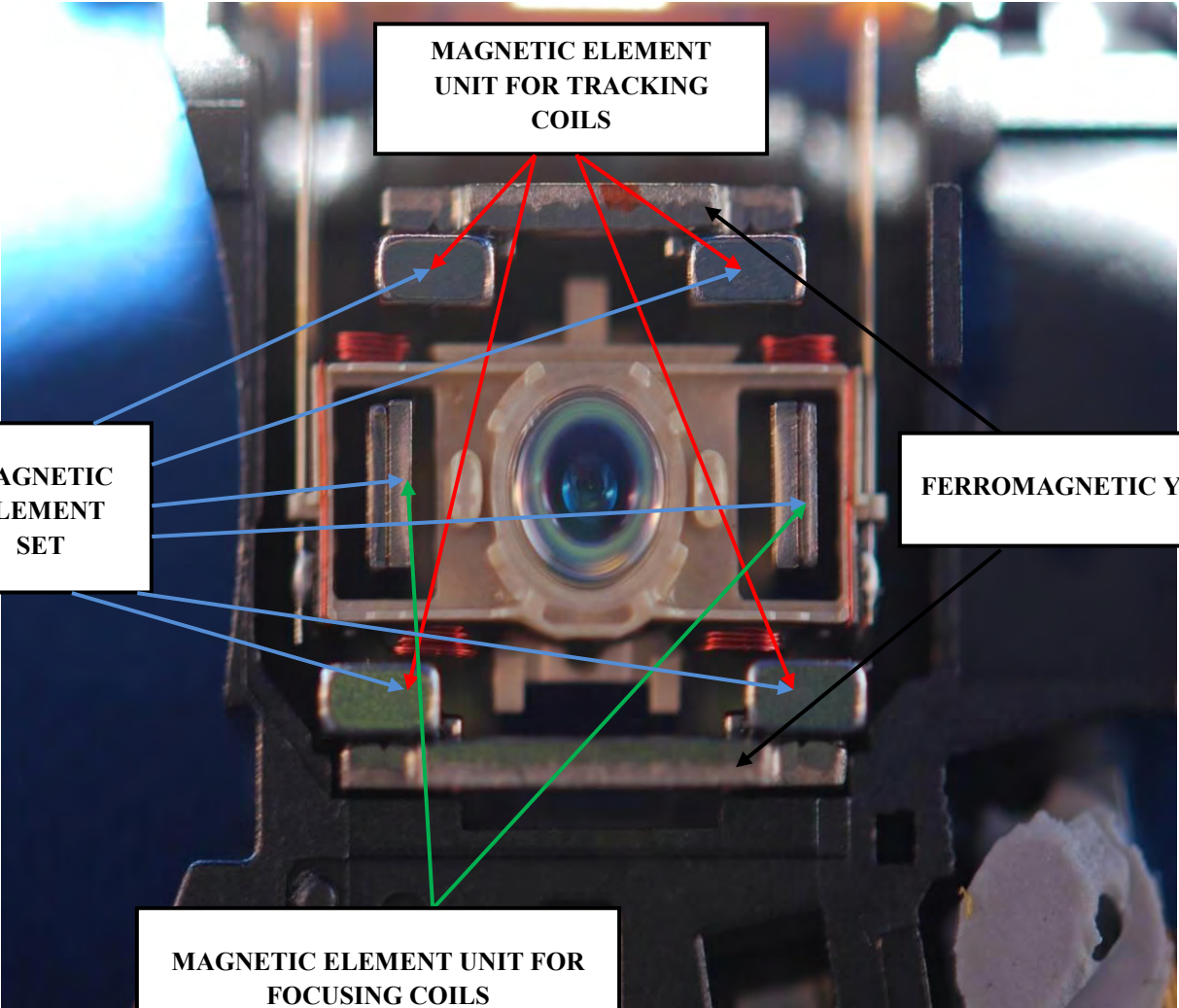
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
<p>18c. <u>two tracking coils</u> and <u>two focusing coils</u> which are respectively located on two opposite sides of the objective lens holder</p>	 <p>The photograph shows a detailed view of the objective lens assembly. A central lens is mounted within a white plastic holder. Four red coils are positioned around the lens, two on the top and two on the bottom. Red arrows point from a label 'TRACKING COILS' to the top two coils. A blue arrow points from a label 'OBJECTIVE LENS HOLDER' to the central lens assembly.</p>

U.S. Patent No. 7,542,384

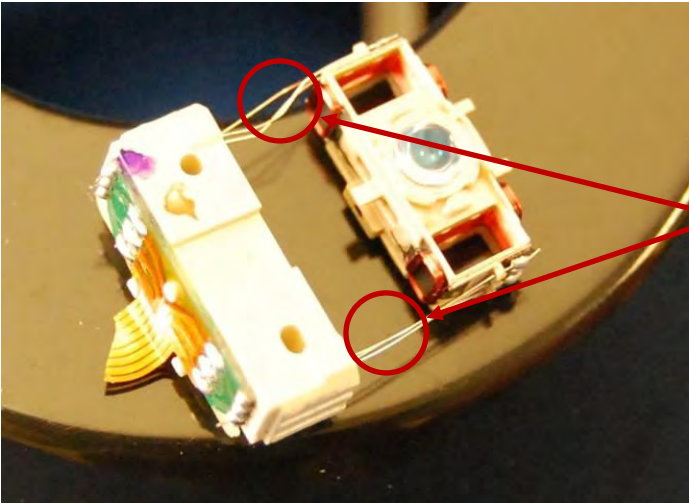
Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
<p>18d. and located on the other two opposite sides of the objective lens holder and surrounded with the two inner yokes;</p>	 <p>A photograph of a camera lens assembly, specifically the objective lens holder and its surrounding components. The assembly is made of a light-colored plastic housing. In the center, there is a circular objective lens. Above the lens, there are two copper-colored coils, each labeled with a red box and the text "TRACKING COILS". Below the lens, there are two more copper-colored coils, each labeled with a green box and the text "TWO FOCUSING COILS". A blue box with the text "OBJECTIVE LENS HOLDER" points to the central lens area. The photograph includes a timestamp in the top left corner: "A013 1280x1024 2010/10/08 15:50:39".</p>

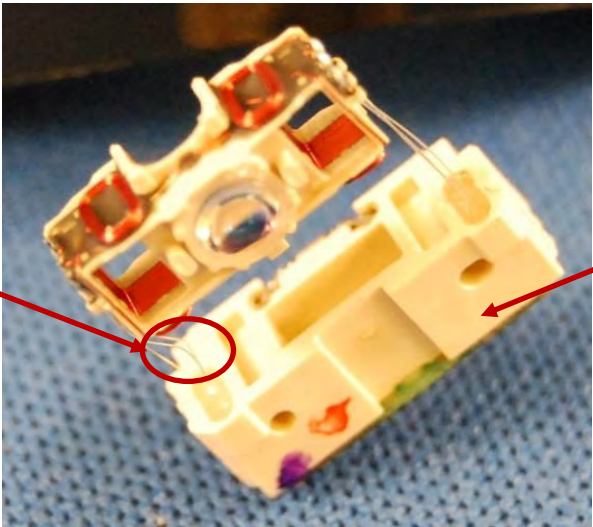
U.S. Patent No. 7,542,384**Exhibit B1**

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
<p>18e. a magnetic element set located on the ferromagnetic yoke corresponding to the tracking coils and the focusing coils to generate a magnetic field perpendicular to the optical axis of the objective lens;</p>	 <p>The photograph shows a central objective lens surrounded by various magnetic and coil components. Labels with arrows point to the following parts:</p> <ul style="list-style-type: none">MAGNETIC ELEMENT UNIT FOR TRACKING COILS: Points to two small rectangular magnetic elements at the top.MAGNETIC ELEMENT SET: Points to four small rectangular magnetic elements arranged around the lens.MAGNETIC ELEMENT UNIT FOR FOCUSING COILS: Points to two small rectangular magnetic elements at the bottom.FERROMAGNETIC YOKE: Points to the dark, structural frame surrounding the lens assembly.

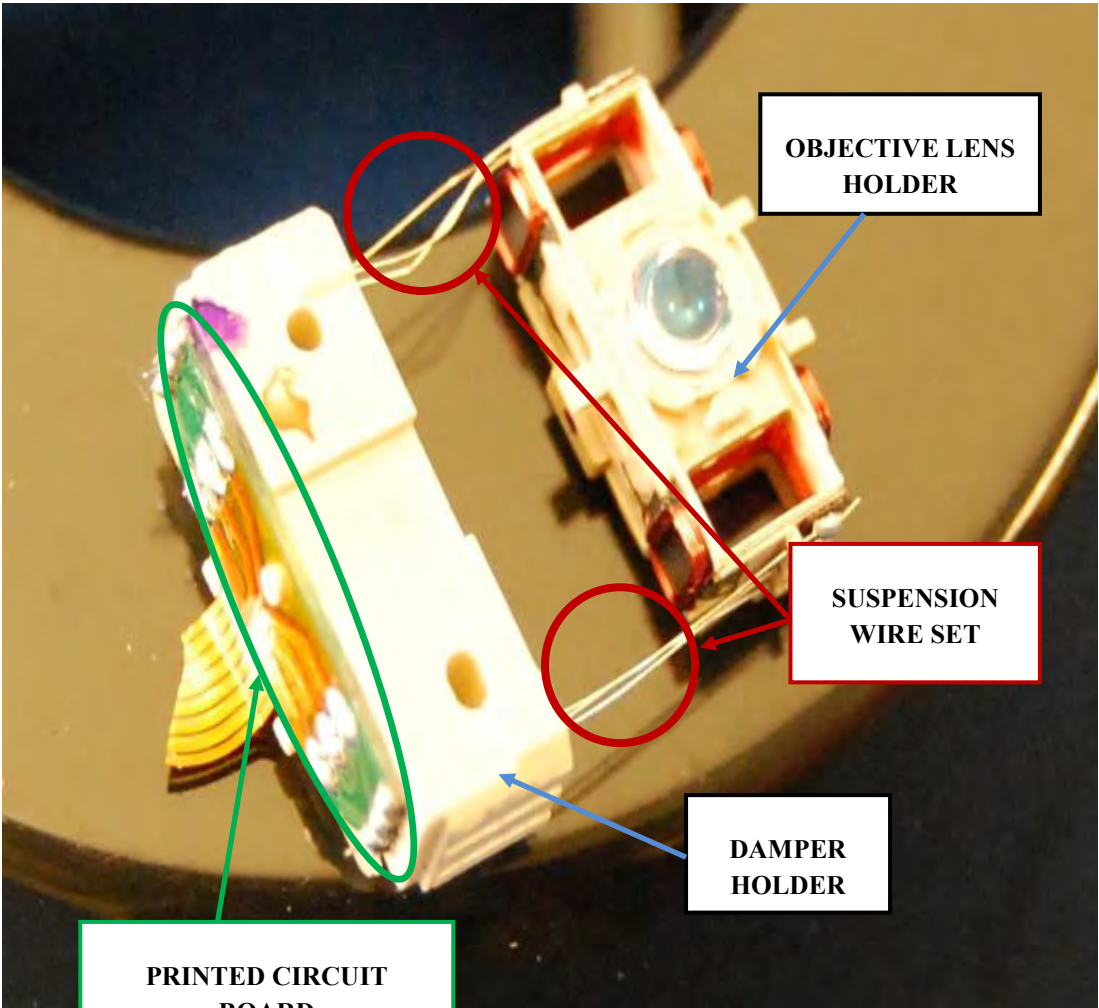
U.S. Patent No. 7,542,384**Exhibit B1**

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
<p>18f. <u>a suspension wire set</u> connecting to the objective lens holder, the tracking coils, and the focusing coils to hang the objective lens holder and channel current to the tracking coils and the focusing coils;</p>	 <p>A photograph of a disassembled electronic component, likely a camera lens assembly, showing internal components. Two red circles highlight the suspension wire set, which consists of thin wires connecting different parts of the assembly. A red box with the text "SUSPENSION WIRE SET" is positioned to the right of the image, with red lines pointing to the highlighted wires.</p>

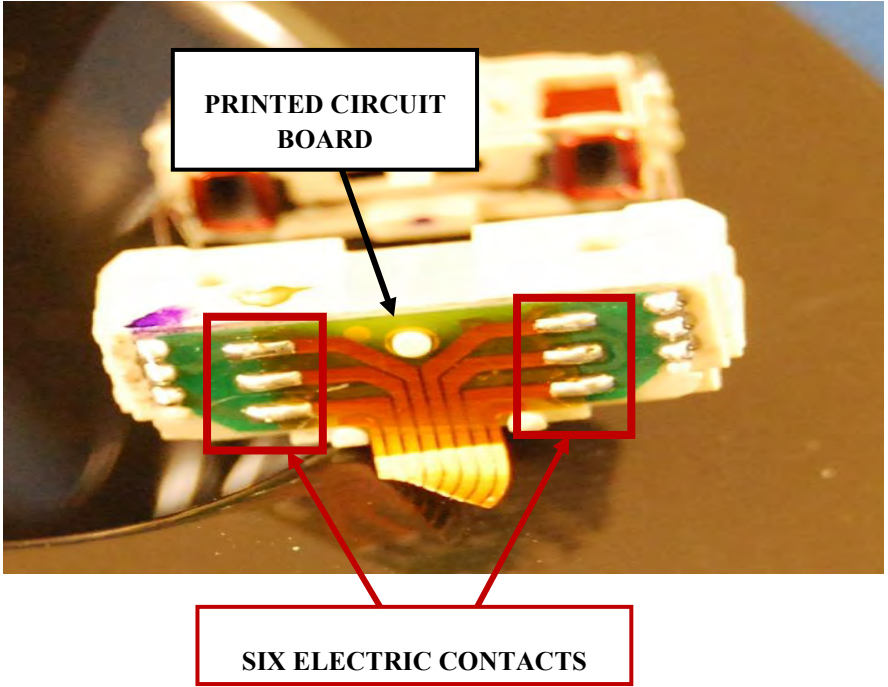
U.S. Patent No. 7,542,384**Exhibit B1**

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
18g. <u>a damper holder</u> located on the ferromagnetic yoke <u>to allow the suspension wire set to pass through</u> ; and	 <p data-bbox="659 461 911 591">SUSPENSION WIRE SET</p> <p data-bbox="1625 428 1824 558">DAMPER HOLDER</p>

U.S. Patent No. 7,542,384**Exhibit B1**

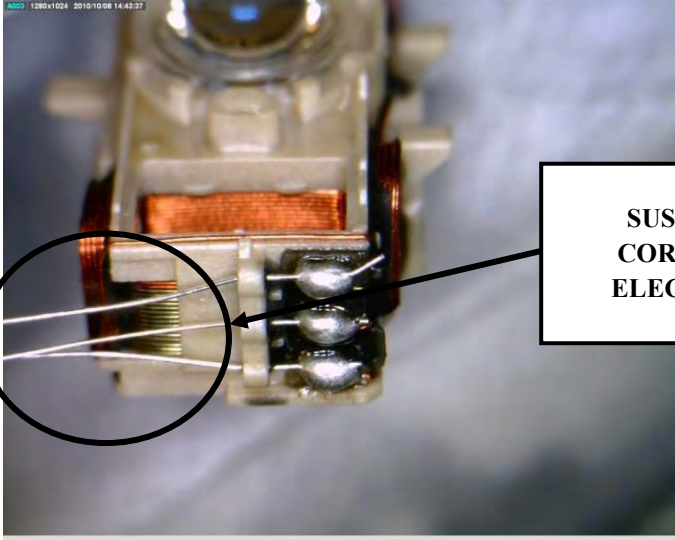
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
<p>18h. <u>a printed circuit board</u> located on the damper holder and surrounded with the <u>suspension wire set</u> to provide the current to the tracking coils and the focusing coils to drive the objective lens holder,</p>	 <p>The photograph shows a close-up of the LG GP08LU30 product. A printed circuit board (PCB) is visible, mounted on a damper holder. The PCB is surrounded by a suspension wire set. The objective lens holder is also visible. Labels with arrows point to the following components:</p> <ul style="list-style-type: none">OBJECTIVE LENS HOLDER (blue arrow)SUSPENSION WIRE SET (red arrow)DAMPER HOLDER (blue arrow)PRINTED CIRCUIT BOARD (green arrow)

U.S. Patent No. 7,542,384**Exhibit B1**

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
<p>18i. wherein the <u>printed circuit board</u> has <u>six electric contacts</u>, the <u>suspension wire set having six suspension wires</u> corresponding to the six electric contacts,</p>	 <p>The photograph shows a close-up of a white plastic connector housing. Inside the housing, a green printed circuit board (PCB) is visible. Two red rectangular boxes are drawn on the PCB, each enclosing a set of three gold-colored electrical contacts. A black arrow points from a white box labeled 'PRINTED CIRCUIT BOARD' to the green PCB. A red arrow points from a white box labeled 'SIX ELECTRIC CONTACTS' to the two sets of contacts highlighted by the red boxes.</p>

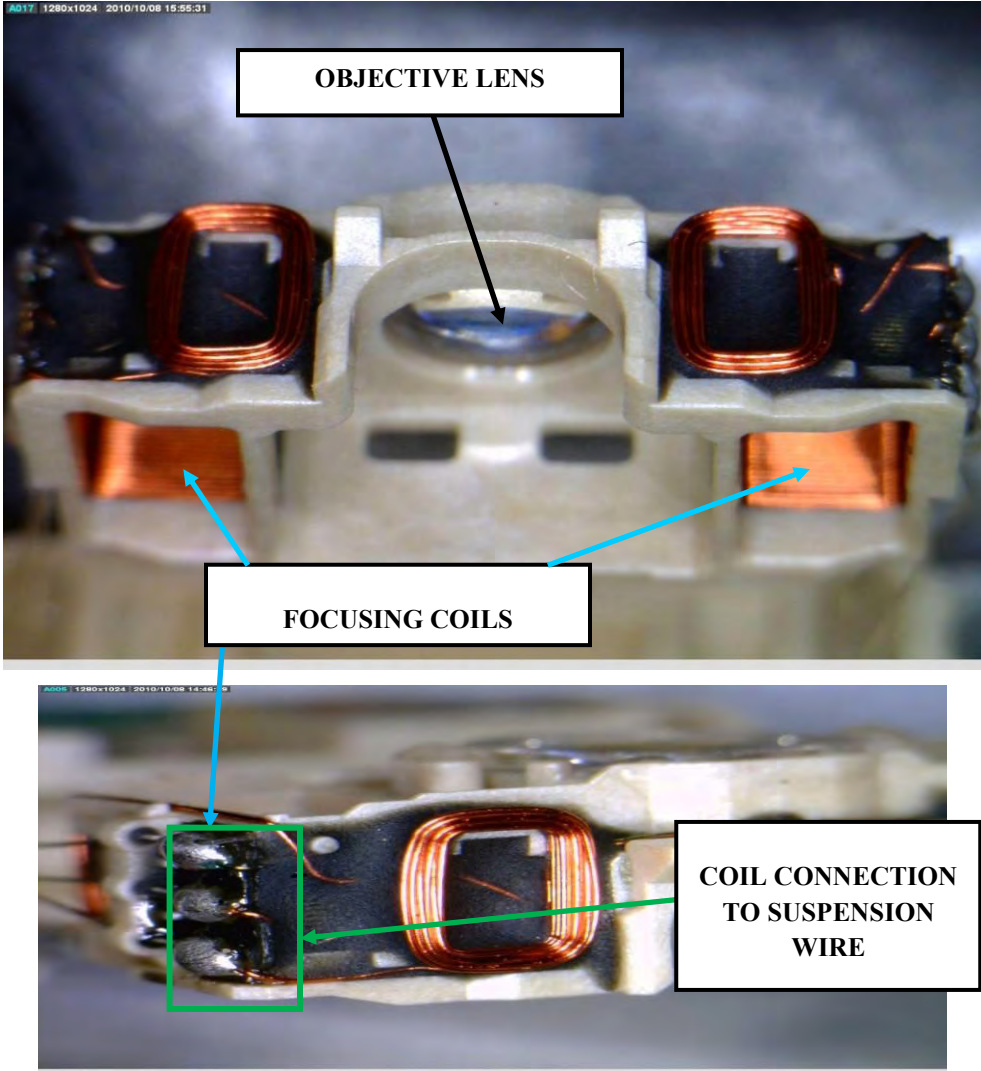
U.S. Patent No. 7,542,384

Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
	 <p>A microscopic photograph of a component, likely a part of a mobile phone, showing a copper-colored coil and several small, round, silver-colored electric contacts. A black circle highlights a set of thin, white suspension wires. A black arrow points from a text box to these wires.</p> <p>SUSPENSION WIRES CORRESPONDING TO ELECTRIC CONTACTS</p>

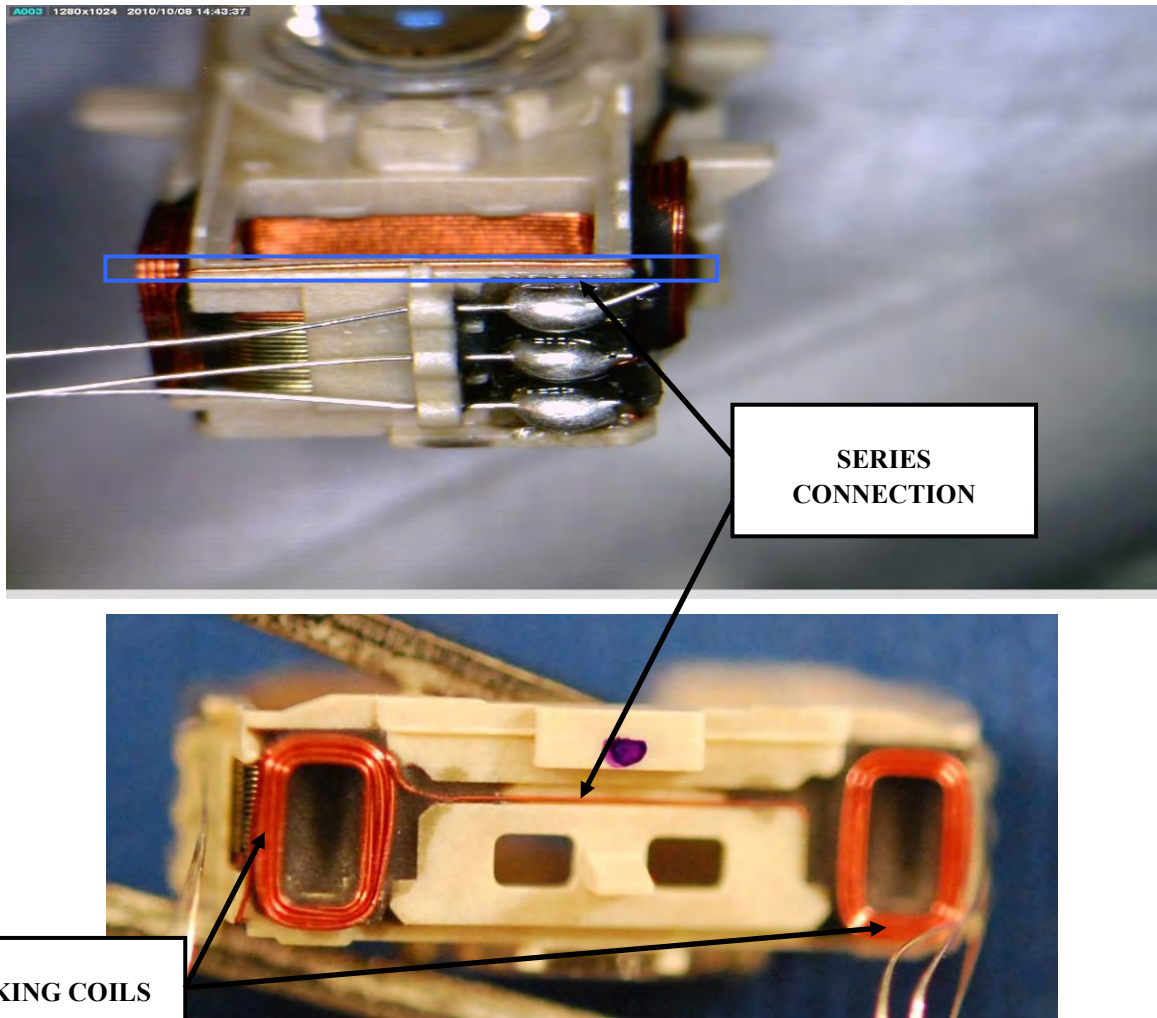
U.S. Patent No. 7,542,384

Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
<p>18j. <u>the two focusing coils</u> placed in the two sides of the objective lens holder respectively and independent of each other, <u>each of the focusing coils</u> <u>has two focusing wire</u> <u>contacts connecting to one</u> <u>of the suspension wires,</u></p>	 <p>The top photograph shows a close-up of a microscope objective lens assembly. A central objective lens is visible, flanked by two copper-colored focusing coils. A black arrow points from the label 'OBJECTIVE LENS' to the lens. Two blue arrows point from the label 'FOCUSING COILS' to the coils on either side. The bottom photograph is a close-up of the focusing coils, showing the electrical connections. A green arrow points from the label 'COIL CONNECTION TO SUSPENSION WIRE' to the connection point. A green box highlights the connection area. Both photographs have a timestamp in the top left corner: 'AD17: 1280x1024 2010/10/08 15:55:31' for the top and 'A005: 1280x1024 2010/10/08 14:45:12' for the bottom.</p>

U.S. Patent No. 7,542,384

Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
<p>18k. and <u>the tracking coils</u> are <u>series connection</u> and <u>connect to the other two</u> <u>electric contacts</u> <u>corresponding to the other</u> <u>two suspension wires.</u></p>	 <p>The top photograph shows a close-up of a mechanical component with a blue box highlighting a series connection of coils. A label 'SERIES CONNECTION' points to this area. The bottom photograph shows a close-up of the same component with two red coils highlighted. A label 'TRACKING COILS' points to these coils.</p>

U.S. Patent No. 7,672,198**Exhibit C1**

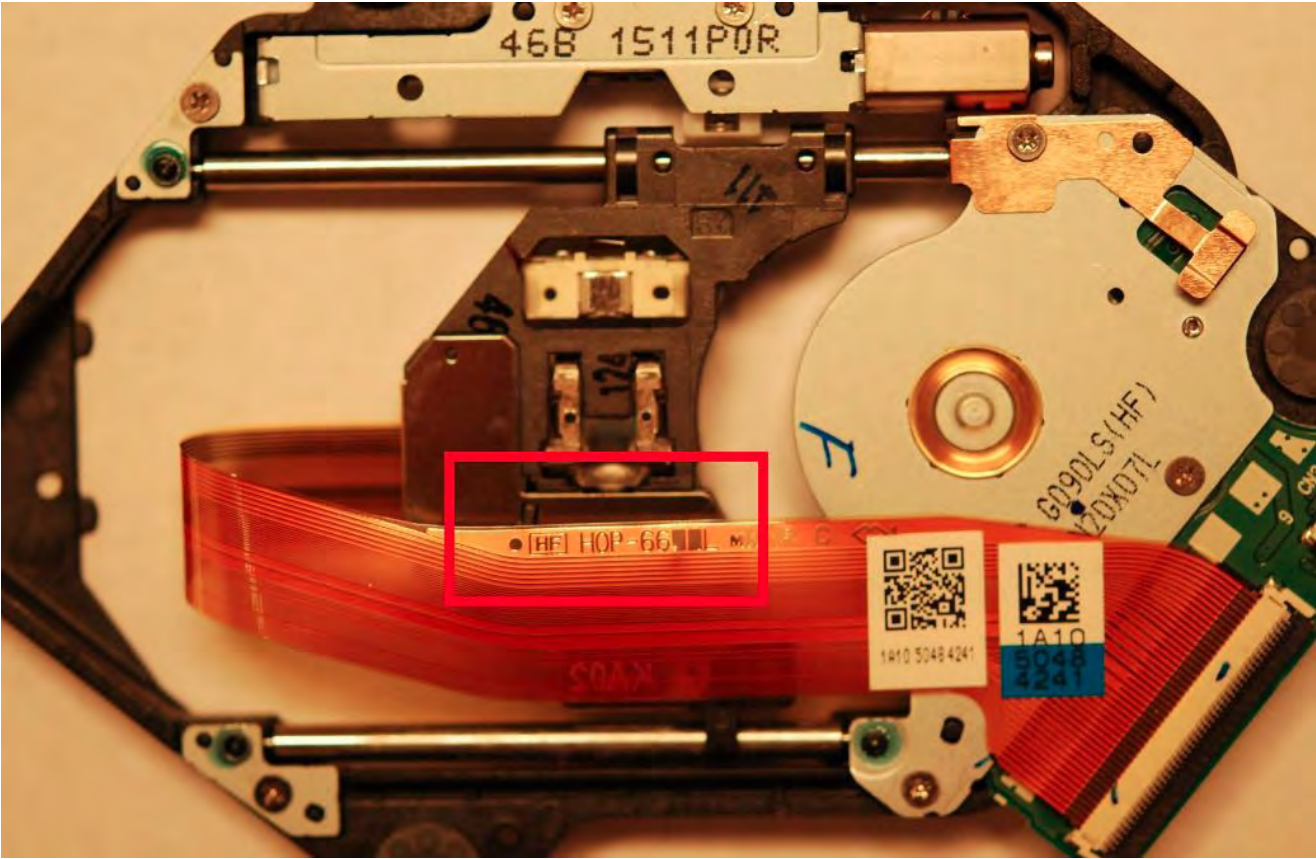
CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
3. An optical pickup head, applicable for moving an objective lens assembly, comprising: ¹	<p>Each element of this claim, except where noted otherwise, and each element of the asserted claims dependent thereon, is present literally and/or under the doctrine of equivalents in the accused LG Products.²</p> <p>ITRI provides these infringement contentions before obtaining complete discovery and disclosures from LG. Specifically, LG has not produced documentation sufficient to demonstrate how each and every optical pickup head operates, and has not produced documentation sufficient to demonstrate that it has identified every LG document corresponding to accused optical pickup heads. Further, LG has “confirmed” that particular LG products utilize certain optical pickup heads that are not borne out by physical inspection. ITRI expects that LG will produce information to fully meet its discovery obligations regarding LG’s instrumentalities beyond that which is publically available. Accordingly, ITRI reserves the right to modify these infringement contentions based upon LG’s document production and required disclosures.</p>

¹ ITRI contends that the preamble to this claim is not limiting in any manner. ITRI’s references to the accused product regarding the preamble are for illustration only and do not constitute an admission that the preamble is limiting.

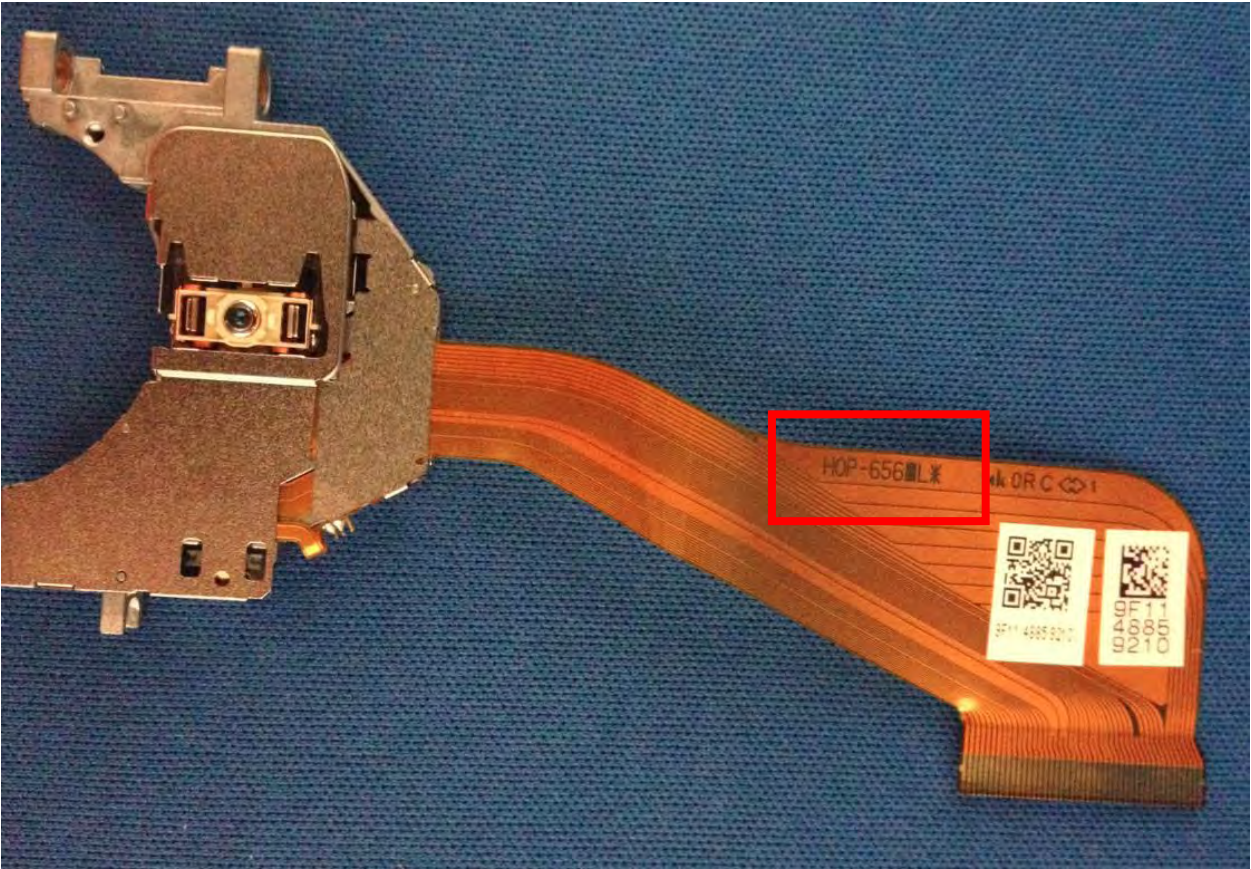
² The LG Products often practice the claim elements in numerous alternative ways in accordance with the present chart. The LG Products should be assumed to act alone or in combination as referenced herein and interpreted in the singular or plural accordingly. LG further provides the LG Products as well as the instructions to customers/users causing them to use the accused products in an infringing manner, including, without limitation, in their default and expected uses.

To the extent each element of this claim, and the asserted claims dependent thereon are not present literally in the accused LG Products, each element is present under the doctrine of equivalents because there is no substantial difference between the elements of the asserted claims and the corresponding functionality in the accused instrumentality, *i.e.*, the corresponding functionality in the accused product performs substantially the same function, in substantially the same way to achieve substantially the same results as the claimed elements.

U.S. Patent No. 7,672,198**Exhibit C1**


CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	<p>Upon physical inspection, the following products use optical pickup units (“OPUs”) that are identical for infringement analysis: GP08LU30, GP08LU11, GP10NB20, GT30L, and GP40LB10. As shown below, the GP40LB10 uses OPU HOP-6611L:</p>  <p>As shown below, the GP08LU11 uses OPU HOP-6561L.</p>

U.S. Patent No. 7,672,198**Exhibit C1**

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	<div data-bbox="548 370 1791 1234"></div> <p>Because these OPUs are physically similar, all products that use either the HOP-6611L or HOP-65611L are infringe in a similar manner to the products physically inspected for this chart.</p> <p>Moreover, according to a letter from Defendants, dated April 5, 2013, the following products share the same OPU (the HOP-6611):</p>


4945
U.S. Patent No. 7,672,198

Exhibit C1

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	<div data-bbox="552 354 583 657">R E D A C T E D</div> <div data-bbox="1125 354 1302 386">REDACTED</div> 


U.S. Patent No. 7,672,198

Exhibit C1


CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	<p><i>Photograph of the product box</i></p> 

U.S. Patent No. 7,672,198

Exhibit C1


CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	

U.S. Patent No. 7,672,198**Exhibit C1**

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	<p><i>Photograph of LG GP08LU30 showing the make and model of manufacture</i></p> 

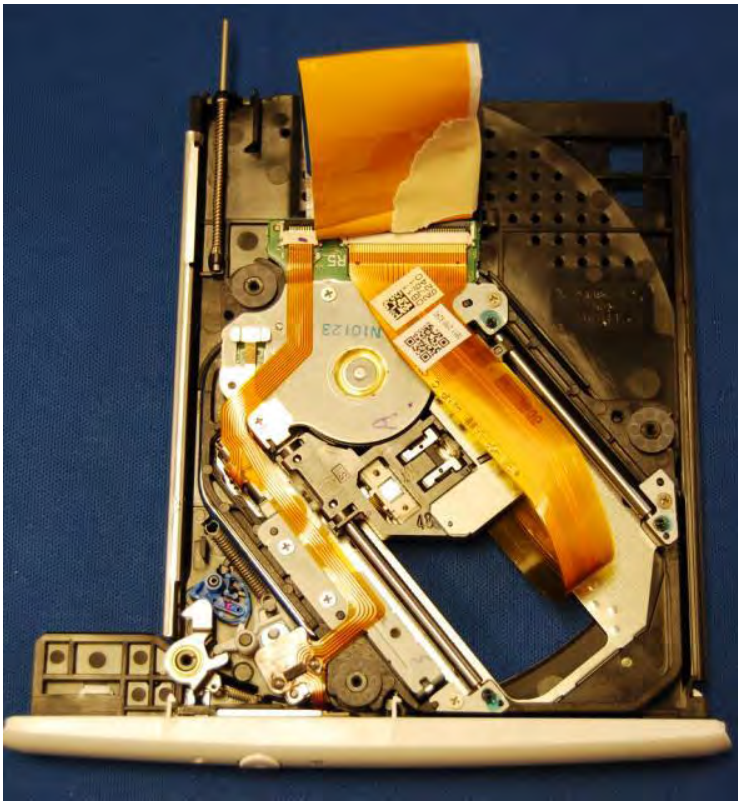
U.S. Patent No. 7,672,198

Exhibit C1

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	<p data-bbox="548 347 1323 381"><i>Photograph of the disk drive after removing the outer panels</i></p>  A photograph of a disassembled laptop hard drive. The top green circuit board is visible, featuring a white label with 'G300' and 'T101' printed on it. Below the board is a yellow flexible ribbon cable. The main body of the drive is a dark metal housing with a circular opening in the center. Inside this opening, a silver-colored disk platter is visible, mounted on a central spindle. A white plastic component, likely part of the actuator or read/write head assembly, is positioned over the platter. The entire assembly is set against a blue background.

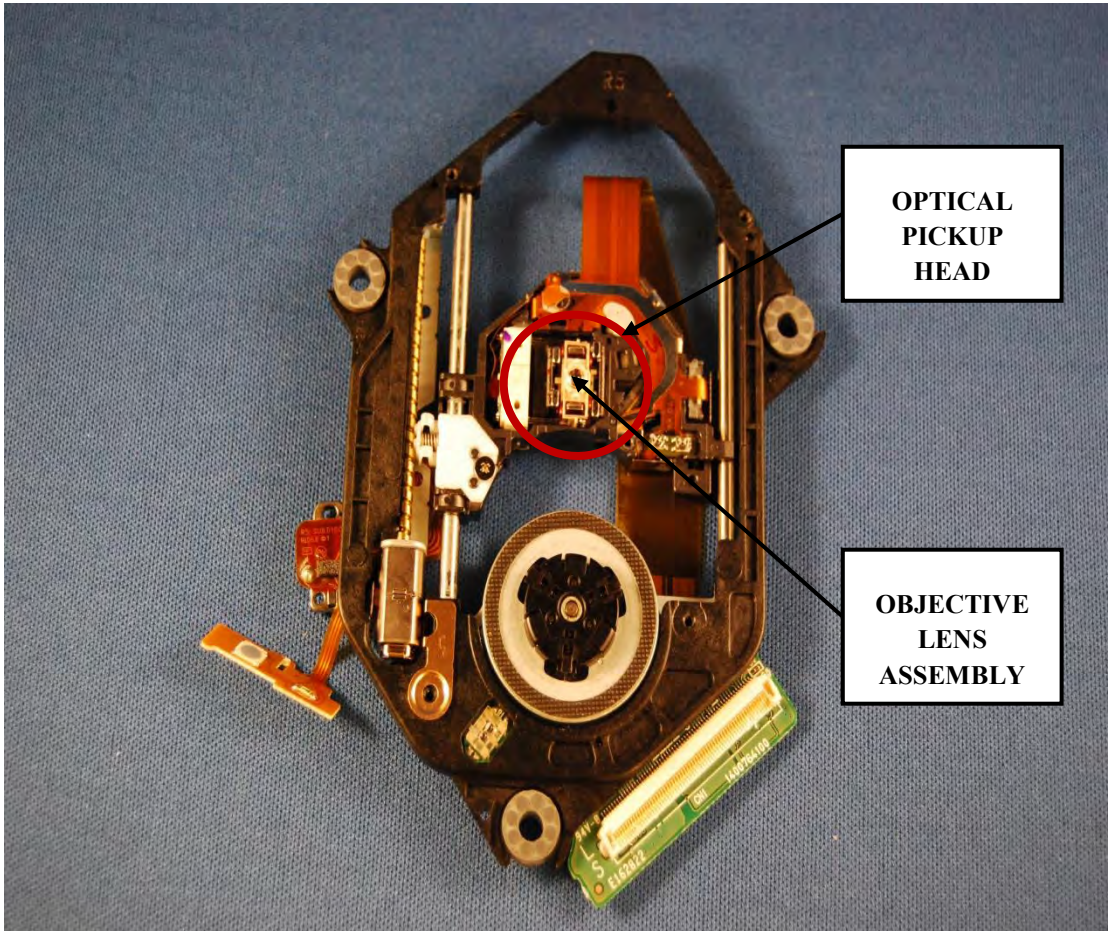
U.S. Patent No. 7,672,198

Exhibit C1

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	<p data-bbox="548 345 1465 381"><i>Photograph of the components involved in optical disk drive mechanism</i></p> 

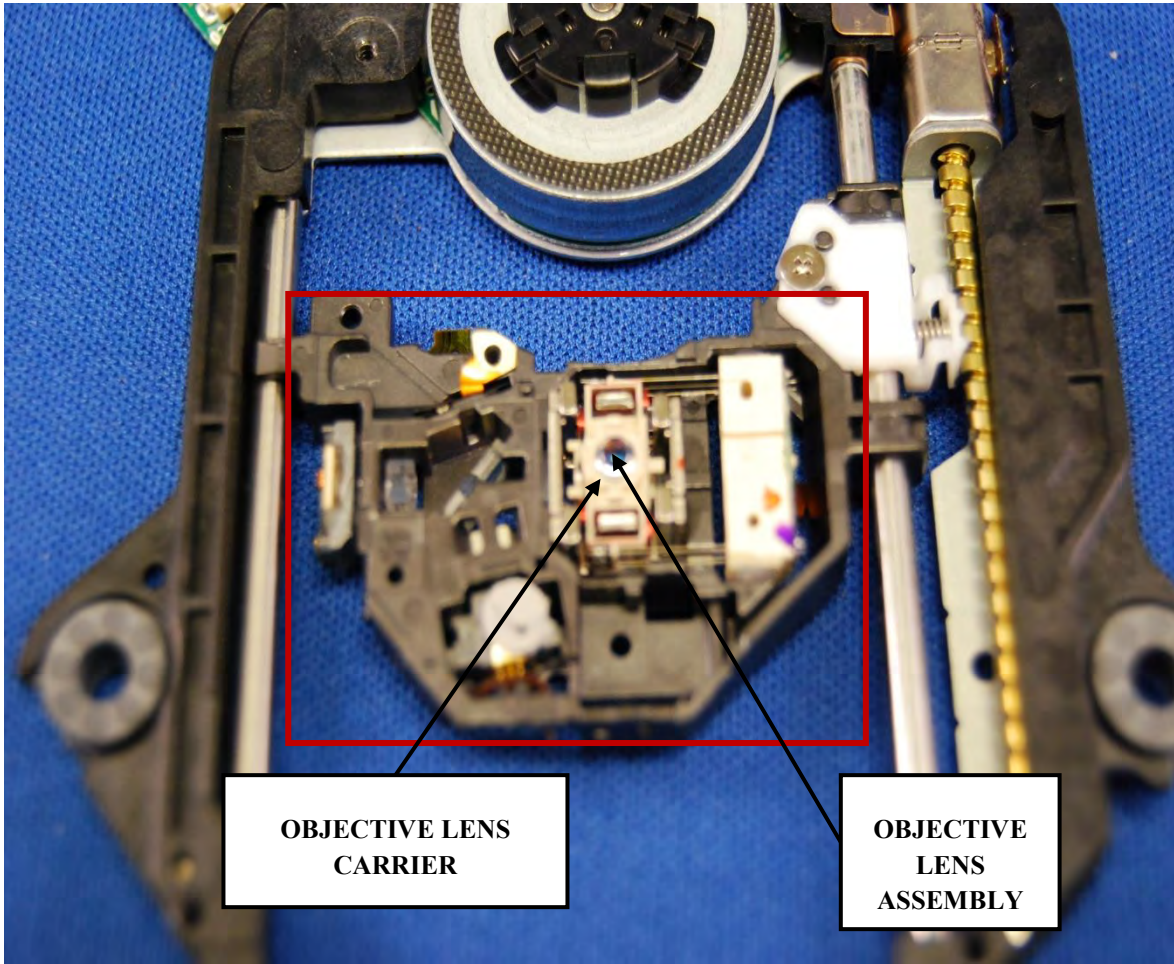
U.S. Patent No. 7,672,198

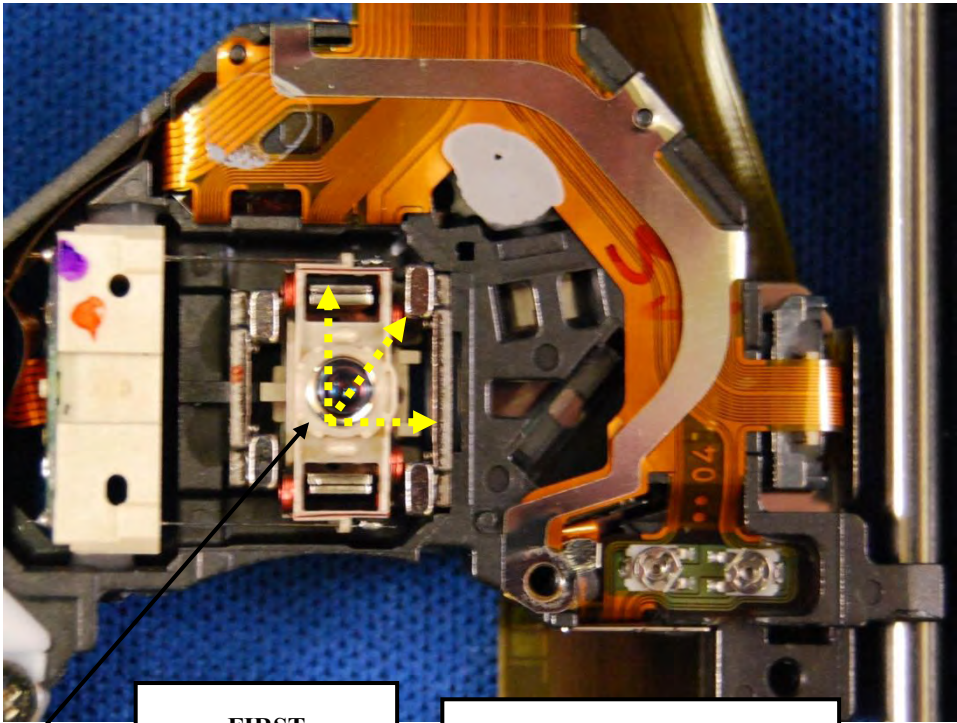
Exhibit C1

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	<p><i>Photograph of optical lens assembly and optical pick up head</i></p>  <p>OPTICAL PICKUP HEAD</p> <p>OBJECTIVE LENS ASSEMBLY</p>

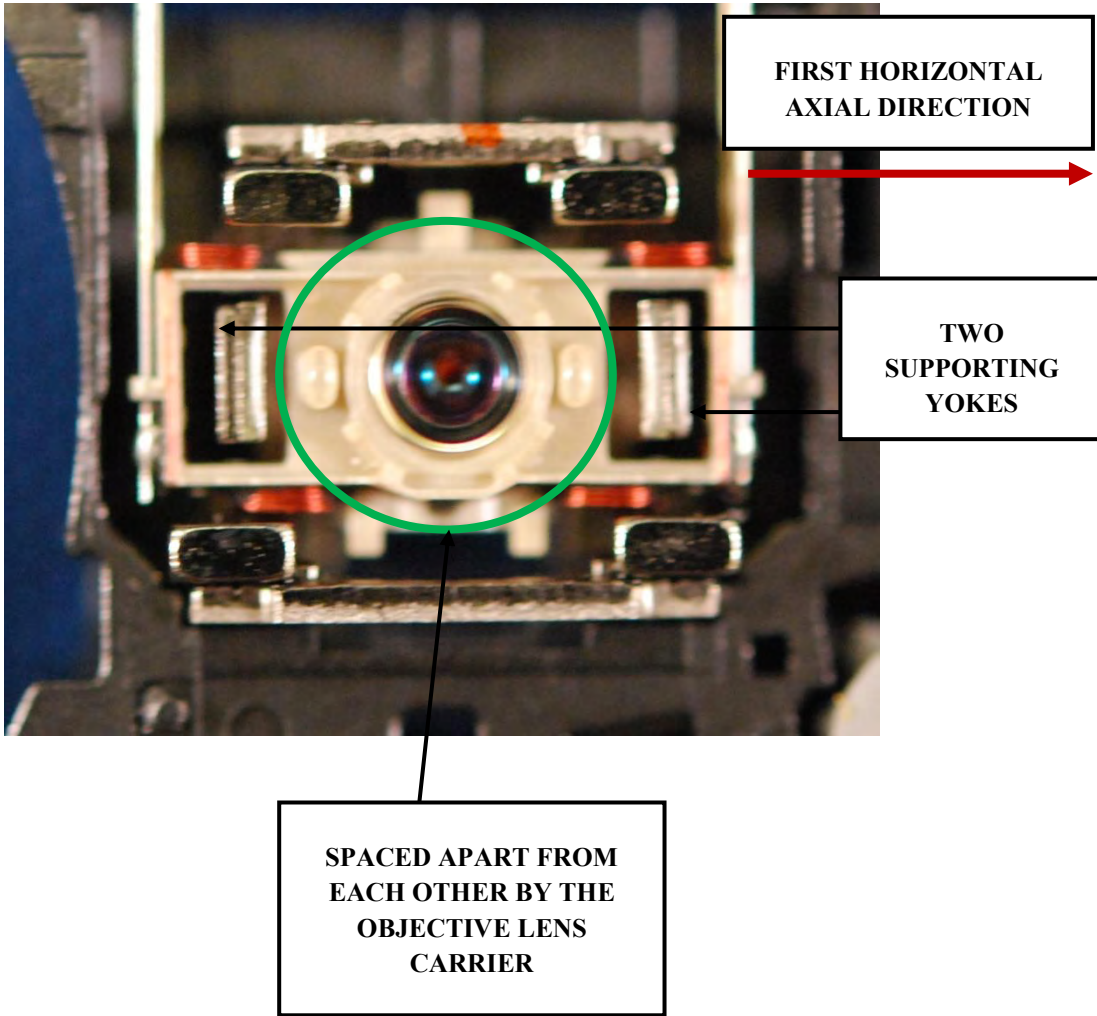
U.S. Patent No. 7,672,198

Exhibit C1

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
3a. an objective lens carrier, for carrying the objective lens assembly,	 <p>The photograph shows a disassembled camera module on a blue textured surface. A red rectangular box highlights a central component. Two black arrows point from labels at the bottom to this component. The label on the left is 'OBJECTIVE LENS CARRIER' and the label on the right is 'OBJECTIVE LENS ASSEMBLY'. The component itself is a complex assembly of metal and plastic parts, including a lens element and various mounting structures.</p>

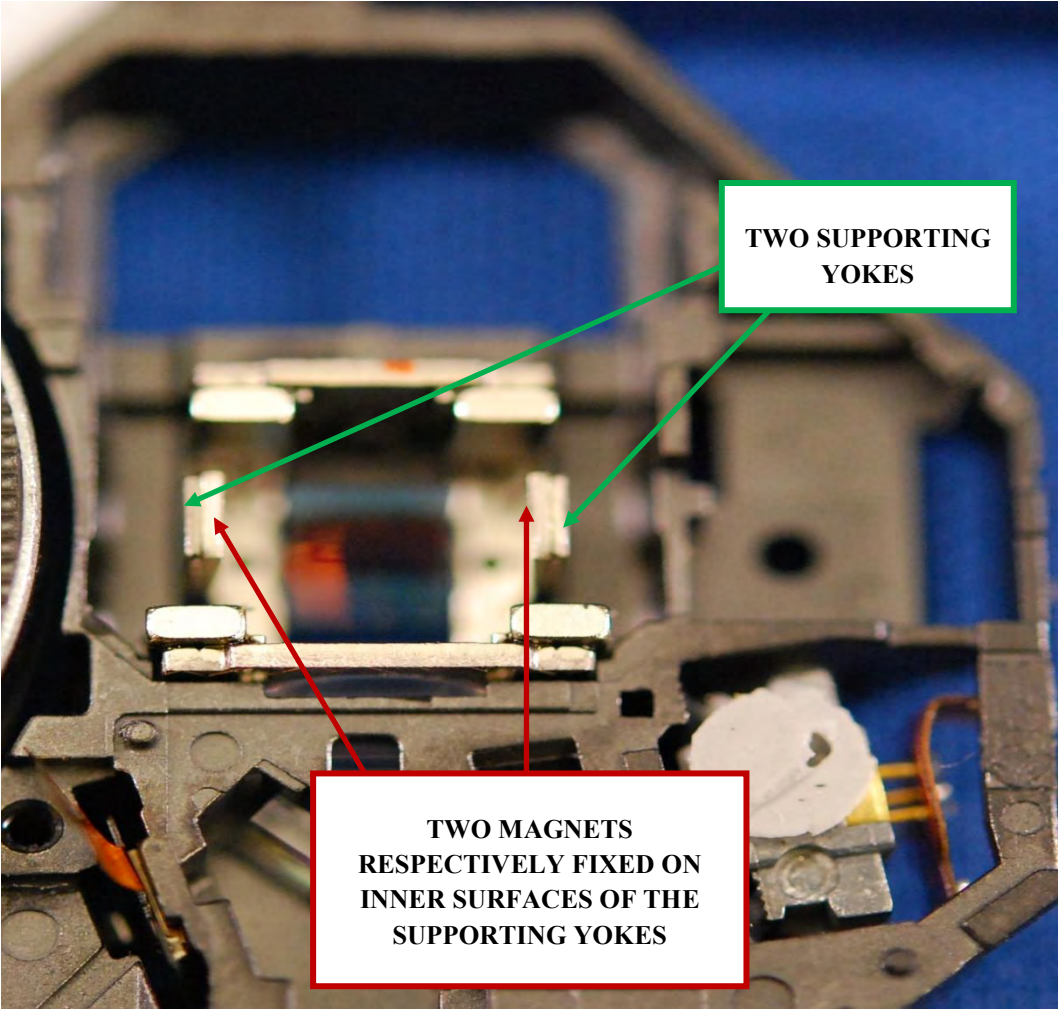
CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
3b. wherein a vertical direction, a first horizontal direction, and a second horizontal direction that are vertical to each other are defined on the objective lens carrier;	 <p>The photograph shows a disassembled camera lens assembly. A black arrow points from the 'OBJECTIVE LENS CARRIER' label to a central component. A dashed yellow circle highlights a specific area on this component, with three yellow arrows pointing outwards. A red line with arrows at the end branches into two directions: one pointing to the 'FIRST HORIZONTAL DIRECTION' label and the other to the 'SECOND HORIZONTAL DIRECTION' label. A separate red arrow points from the 'VERTICAL DIRECTION (out of the paper)' label towards the same central area.</p> <p>OBJECTIVE LENS CARRIER</p> <p>FIRST HORIZONTAL DIRECTION</p> <p>VERTICAL DIRECTION (out of the paper)</p> <p>SECOND HORIZONTAL DIRECTION</p>

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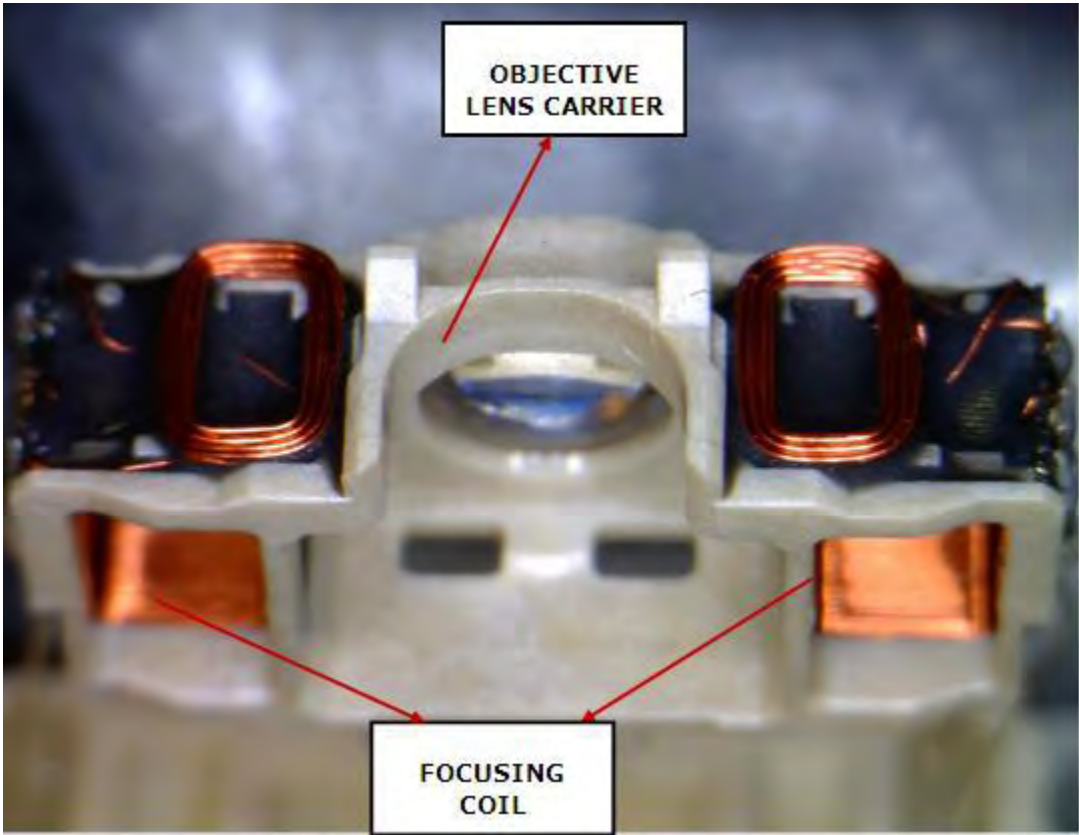
CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
3c. two supporting yokes, arranged along a first horizontal axial direction and spaced apart from each other by the objective lens carrier, such that the objective lens carrier is located between the two supporting yokes;	 <p data-bbox="1493 358 1860 488">FIRST HORIZONTAL AXIAL DIRECTION</p> <p data-bbox="1608 618 1871 781">TWO SUPPORTING YOKES</p> <p data-bbox="1050 1138 1434 1352">SPACED APART FROM EACH OTHER BY THE OBJECTIVE LENS CARRIER</p>

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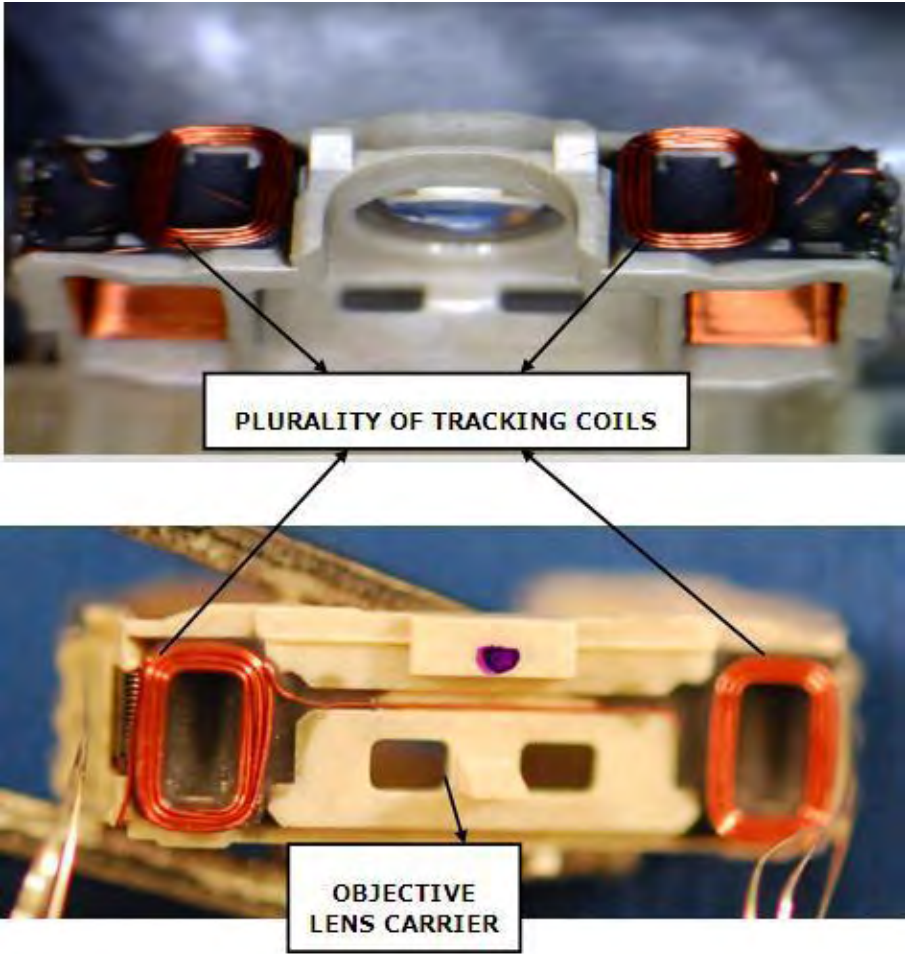
Exhibit C1

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
3d. two magnets, respectively fixed on inner surfaces of the supporting yokes that are facing each other, such that the objective lens carrier is located between the two magnets	 <p data-bbox="1407 527 1696 652">TWO SUPPORTING YOKES</p> <p data-bbox="997 1112 1432 1328">TWO MAGNETS RESPECTIVELY FIXED ON INNER SURFACES OF THE SUPPORTING YOKES</p>

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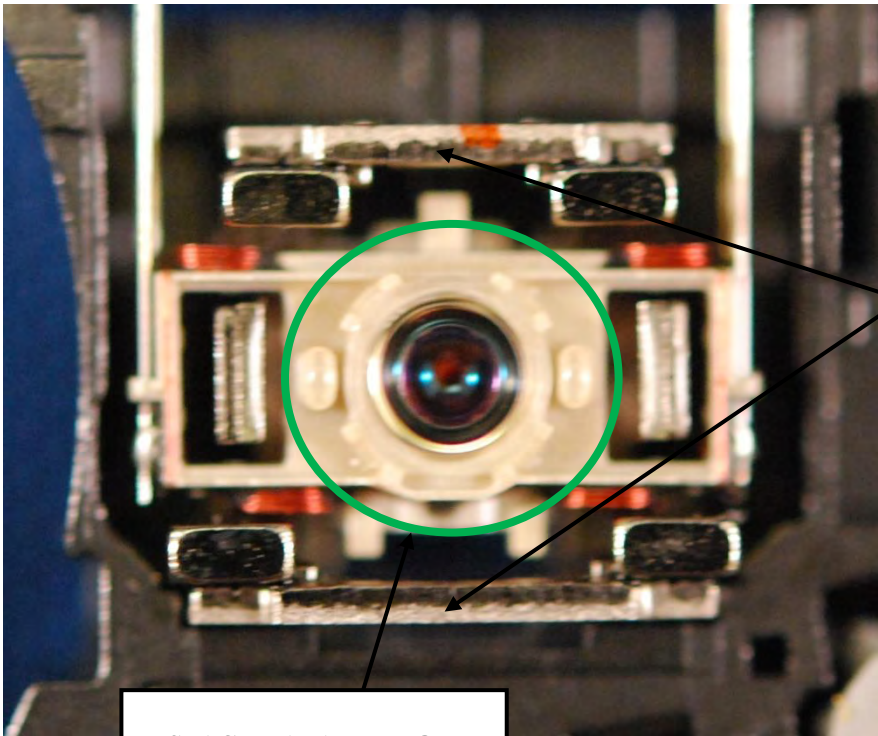
CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
<p>3e. at least a focusing coil, winding around the objective lens carrier, wherein a normal direction of the focusing coil is parallel to the vertical direction;</p>	 <p>The photograph shows a cross-section of a camera lens assembly. A central lens element is visible, surrounded by a white plastic housing. Two copper-colored coils are wound around the lens carrier, one on each side. Red arrows point from the labels to the respective components. The label 'OBJECTIVE LENS CARRIER' points to the central lens element, and the label 'FOCUSING COIL' points to the copper coils on either side.</p>

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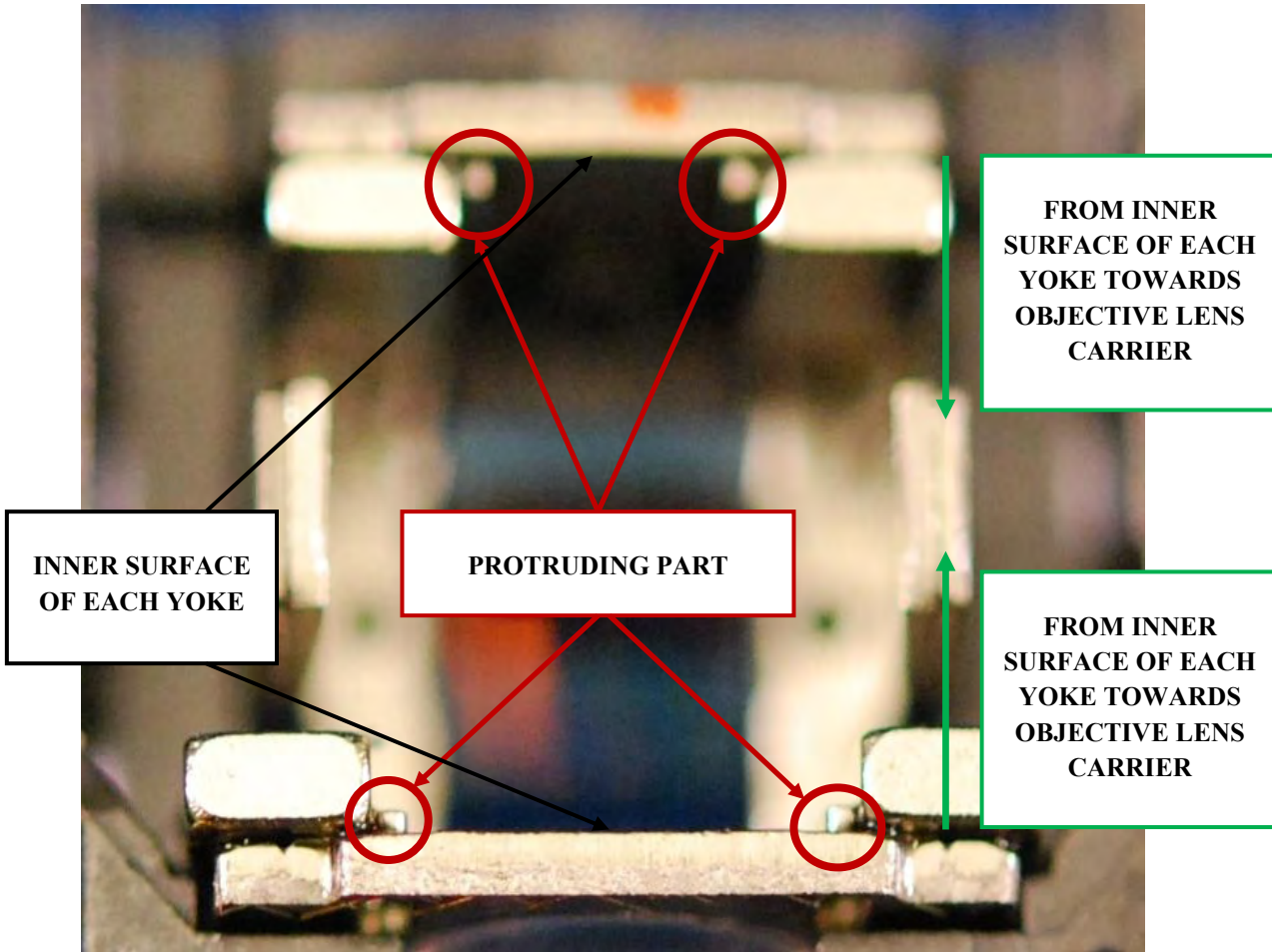
CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
3f. a plurality of tracking coils, disposed at the objective lens carrier, wherein a normal direction of the tracking coil is vertical to the vertical direction and parallel to a plane formed by the first horizontal direction and the second horizontal direction; and	 <p>The evidence consists of two photographs. The top photograph shows a close-up of two copper-colored tracking coils mounted on a white plastic objective lens carrier. A label 'PLURALITY OF TRACKING COILS' with arrows points to both coils. The bottom photograph shows a similar view from a different angle, with a label 'OBJECTIVE LENS CARRIER' pointing to the central part of the carrier. Arrows also point from this label to the two coils.</p>

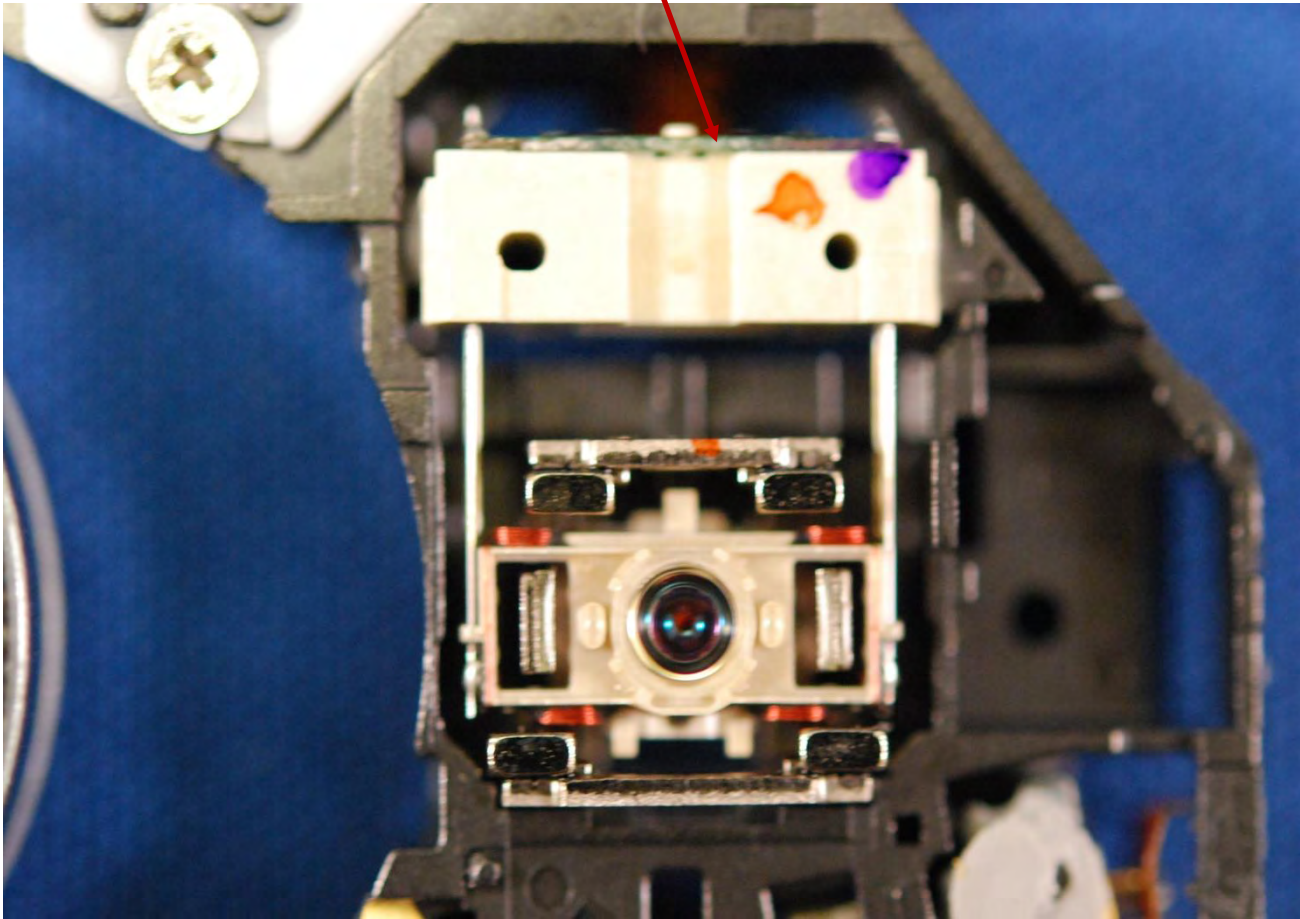
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Exhibit C1

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
<p>3g. two yokes, arranged along the second horizontal axial direction and spaced apart from each other by the objective lens carrier, such that the objective lens carrier is located between the two yokes</p>	 <div data-bbox="1541 529 1850 794" style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>TWO YOKES ARRANGED ALONG THE SECOND HORIZONTAL AXIAL DIRECTION</p> </div> <div data-bbox="764 1027 1148 1239" style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>SPACED APART FROM EACH OTHER BY THE OBJECTIVE LENS CARRIER</p> </div> <div data-bbox="1606 933 1850 1141" style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>SECOND HORIZONTAL AXIAL DIRECTION</p> </div>

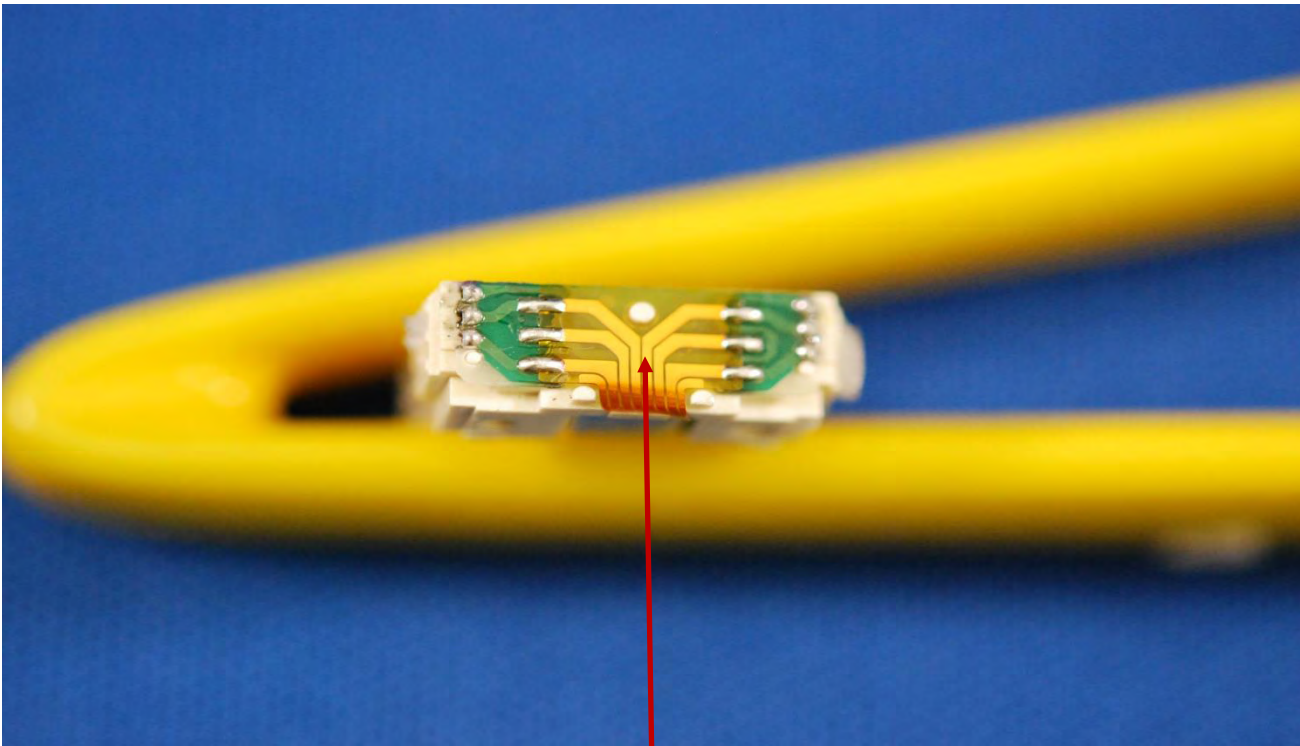
U.S. Patent No. 7,672,198**Exhibit C1**

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
3h. wherein a protruding part is protruded from an inner surface of each yoke and extends towards the objective lens carrier.	 <p data-bbox="611 846 877 1000">INNER SURFACE OF EACH YOKE</p> <p data-bbox="999 846 1394 954">PROTRUDING PART</p> <p data-bbox="1579 493 1873 748">FROM INNER SURFACE OF EACH YOKE TOWARDS OBJECTIVE LENS CARRIER</p> <p data-bbox="1579 907 1873 1162">FROM INNER SURFACE OF EACH YOKE TOWARDS OBJECTIVE LENS CARRIER</p>

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
<p>4. The optical pickup head as claimed in claim 3, further comprising a circuit board and a plurality of metal lines, wherein the circuit board is fixed on one of the supporting yokes to receive electric power input from an external device; one end of the metal line is electrically connected to the circuit board, and other end is electrically connected to the focusing coil and the plurality of tracking coils.</p>	<p style="text-align: center;">CIRCUIT BOARD</p> 

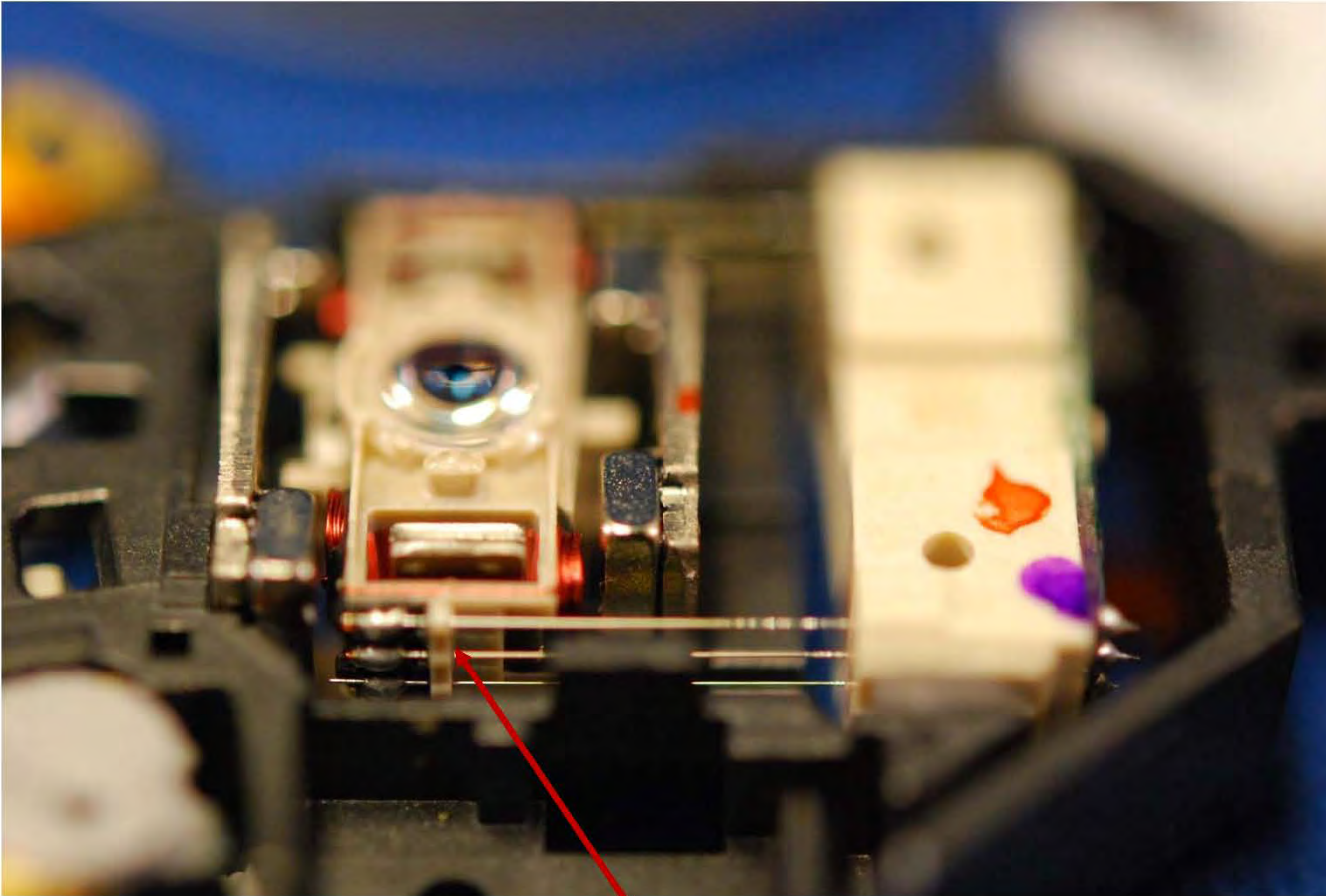
U.S. Patent No. 7,672,198

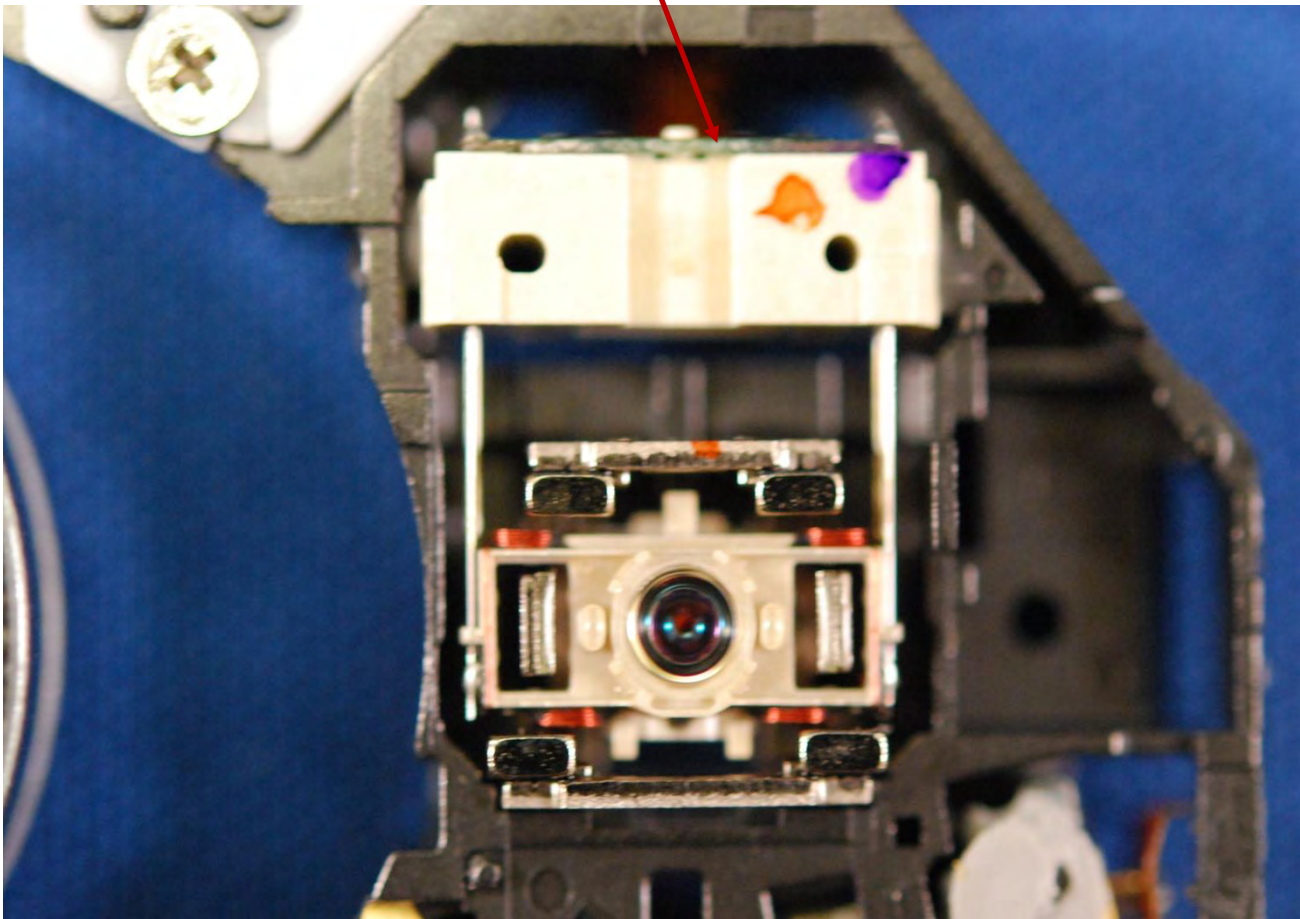
Exhibit C1

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	 <p data-bbox="1100 1240 1318 1268">CIRCUIT BOARD</p>

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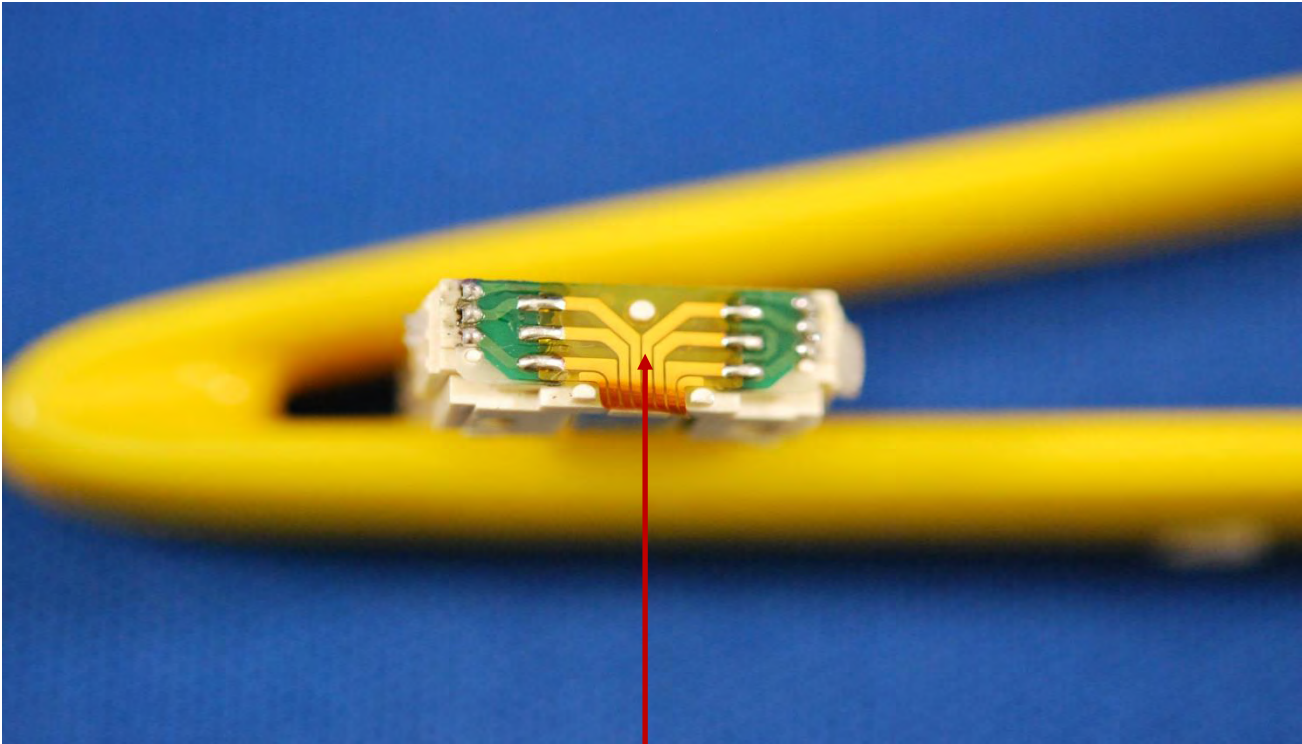
Exhibit C1

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	 <p data-bbox="852 1312 1570 1341">ELECTRICALLY CONNECTED TO THE FOCUSING COIL</p>

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
<p>4. The optical pickup head as claimed in claim 3, further comprising a circuit board and a plurality of metal lines, wherein the circuit board is fixed on one of the supporting yokes to receive electric power input from an external device; one end of the metal line is electrically connected to the circuit board, and other end is electrically connected to the focusing coil and the plurality of tracking coils.</p>	<p style="text-align: center;">CIRCUIT BOARD</p> 

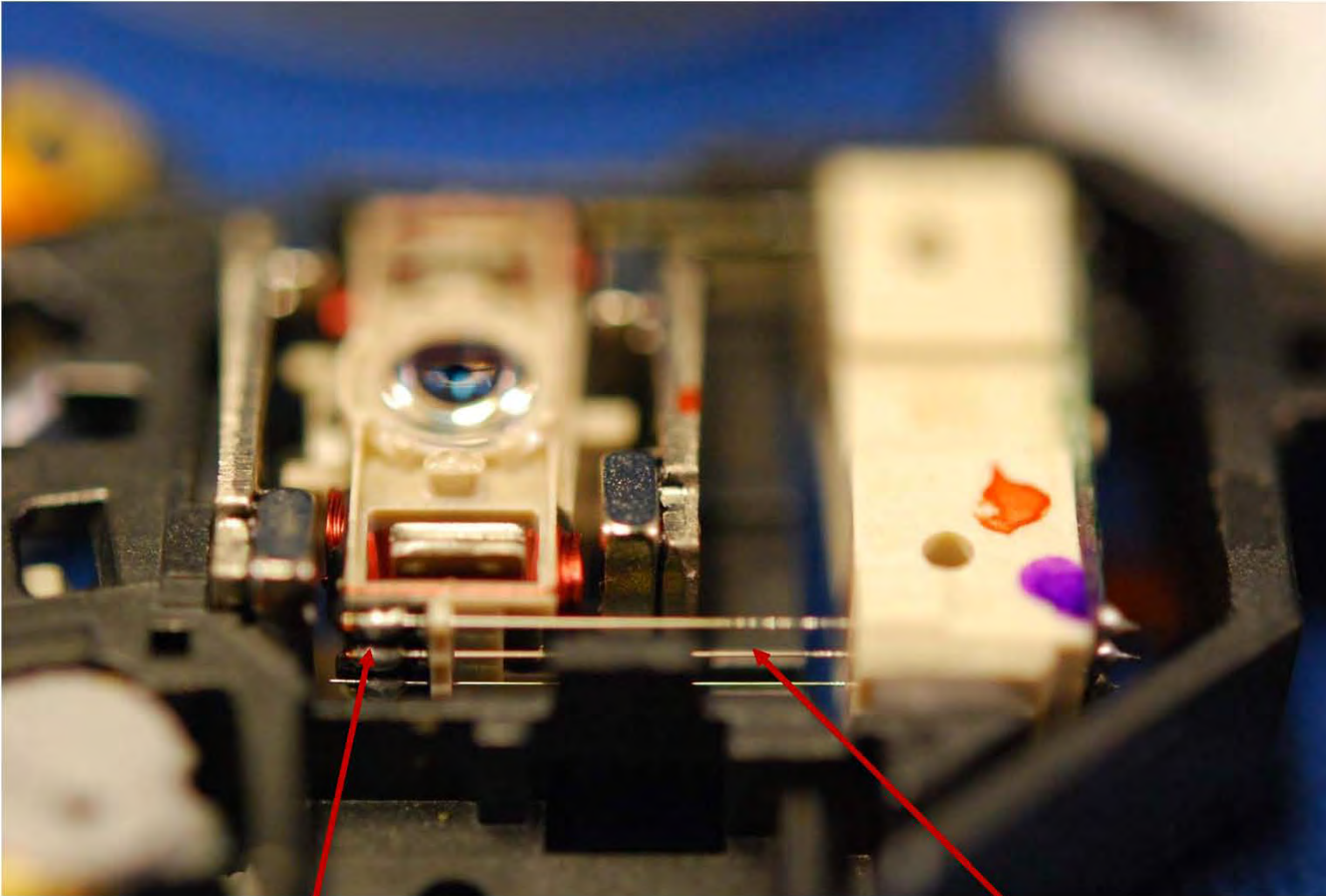
U.S. Patent No. 7,672,198

Exhibit C2

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	 <p data-bbox="1100 1240 1318 1268">CIRCUIT BOARD</p>

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Exhibit C2

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	<div data-bbox="548 399 1877 1292"></div> <div data-bbox="548 1312 1266 1339">ELECTRICALLY CONNECTED TO THE FOCUSING COIL</div> <div data-bbox="1388 1312 1780 1339">PLURALITY OF METAL LINES</div>